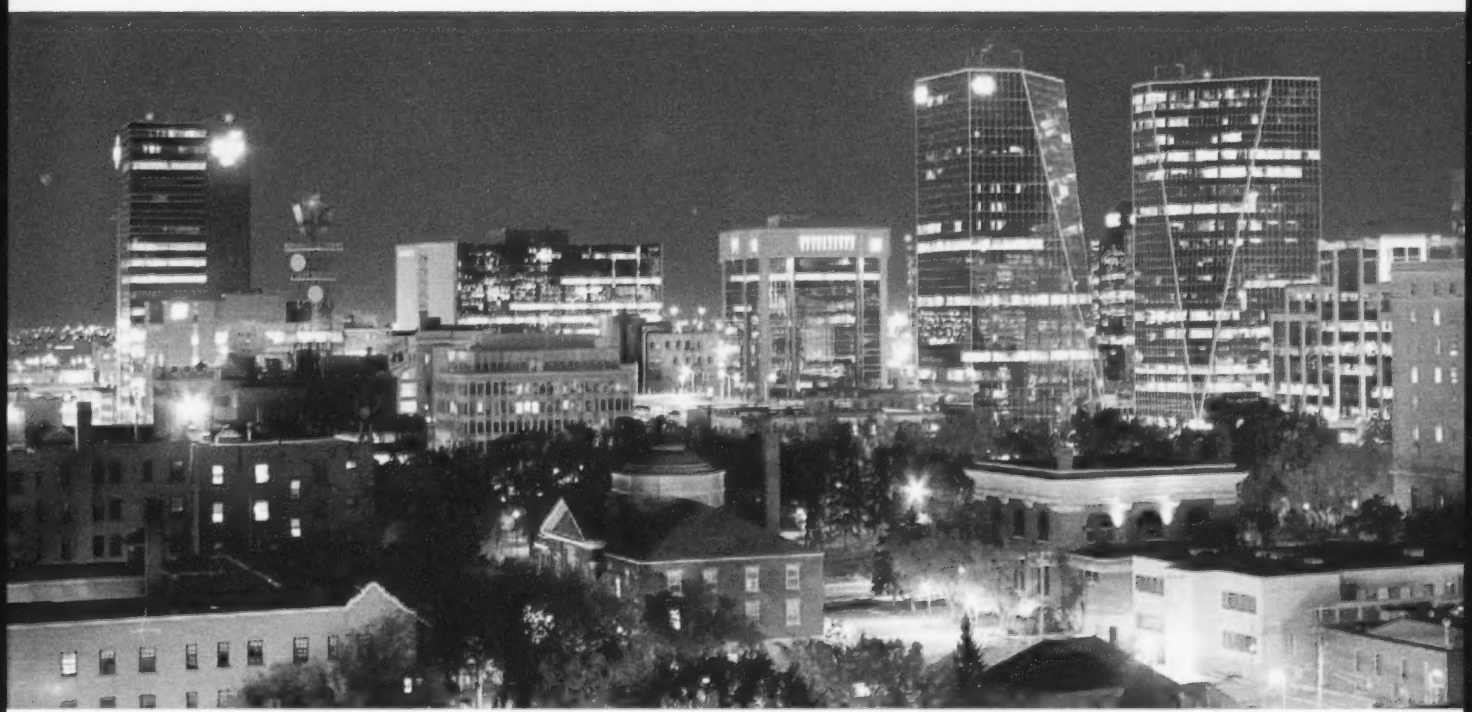
2011

CITY OF REGINA

WATER & SEWER UTILITY BUDGET

AS APPROVED BY CITY COUNCIL



City of Regina | REGINA
Infinite Horizons

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November 17, 2010

To: His Worship the Mayor,
and Members of City Council

Re: Water and Sewer Utility Budget

Each year City Council is required to adopt operating and capital budgets. There are three components to the budgets: the General Operating Budget, the Water and Sewer Utility Operating and Capital Budget and the General Capital Budget. This document is the Water and Sewer Utility Budget, including the 2011 Utility Operating Budget and the 2011 – 2015 Utility Capital Budget.

Budget Highlights

- Utility rates for 2011 are proposed for approval by City Council concurrently with the Water and Sewer Utility Budget. Rates will be adopted for 2011 through 2013. For a typical residential customer, the 2011 rates result in a 9.0% increase or about $8.50 per month. The increase for a sample commercial customer is 9.2% or about $57.10 per month.

- The overall revenue increase for 2011 is 12.9%. The proposed rates for 2011 will result in increased revenues of about 8.84%. This reflects a 9% increase in utility rates, the impact of additional customers and a decrease due to reduced average consumption and the introduction of proration. Details on the rates for 2011 through 2013 are provided on pages 10 and 11 of this document. In addition to the rate related increase, $1.5 million is budgeted for a grant through the Saskatchewan Infrastructure Growth Initiative Program, as well as $1.6 million for interest earned on investments.

- The 2011 Utility Operating Budget provides the funding necessary to meet legislative requirements and Council's service objectives for water, wastewater and drainage. The total 2011 Operating budget for the Utility, including debt repayment, is about $58.3 million; an increase of $2.7 million from the 2010 budget. Cost increases include additional costs for the purchase of materials such as pipe, chemicals, electricity and the cost of water from the Buffalo Pound Water Treatment Plant, as well as adjustments to allocated costs for equipment and other goods and services. The Utility Operating Budget also provides for the continued development of asset management, business planning and performance metrics to achieve sustainable infrastructure investment strategies.

- The 2011 – 2015 Utility Capital Program totals $343.6 million, with 2011 totaling $69.1 million. In comparison, the total 2010 – 2014 utility capital program was about $282.6 million, with 2010's capital investment at $62.1 million. Major 2011 projects include Wastewater Treatment Plant Refurbishing ($4.2 million) and Expansion ($2.8 million), Buffalo Pound Water Treatment Plant Upgrades ($3.0 million), System Upgrades for Pressure Zone 2 ($13.0 million), McCarthy Boulevard Pumping Station Upgrade ($14.0 million), and the Albert Park Detention Pond ($4.0 million).

- The 2011 – 2015 Capital Program proposes a total of $172 million in debt financing to meet these capital requirements. This total includes the repayment of $43.1 million in debt reallocated from the Global Transportation Hub, which will be paid out in 2014, requiring refinancing for that portion of the overall debt. The timing of debt issues will largely depend upon the construction schedule for the wastewater treatment plant.

- Each year an amount is transferred to the General Operating Fund, representing a payment in lieu of taxes and access fee. Any organization or utility operating in a municipality would be required to pay the municipality either property taxes or an access fee for operating rights. Regina's transfer is the total of 7.5% of the previous year's budgeted revenues for billed water consumption, wastewater charges and drainage infrastructure levy plus an amount ($675,000) estimated to be 3/7ths of the GST rebate received by the Utility. This amount is the additional rebate provided by the Federal Government starting in 2004. For 2011, these budgeted amounts total $6,376,900 which is used for general municipal expenses.

Public Reporting

In 2005, the Province adopted new regulations in Part V.1 of *The Cities Regulations* regarding Public Reporting on Municipal Waterworks. The regulations apply only to waterworks, however since the Utility includes water, wastewater and drainage services, the information required by the regulations is provided for the entire utility. The information requirements include:

- Information on the rate policy and capital investment strategy as adopted pursuant to sections 22.3 and 22.4 of the regulations. The information required with respect to the City's rate policy is provided on pages 8 through 11 of this document. Information on the capital investment strategy is included in the Utility Capital Program Section of this document and in particular, the Infrastructure Overview Section starting on page 47.

- A financial overview providing the information outlined in the regulations. The data outlined in the regulations is included in the Introduction Section of this document on page 1. More detailed information on the revenues and expenditures is provided in the detailed Utility Revenue and Utility Expenditure sections. The regulations also require a comparison of the Utility revenues to expenditures and debt payments, expressed as a ratio in accordance with the following formula:

$$\frac{\textbf{Revenues}}{\textbf{(Expenditures + Debt Payments)}}$$

  For 2011, based on the definitions in the regulations, the ratio for the Water and Sewer Utility is 1.68, based on revenues of $87,007,200, expenditures of $46,436,900 and debt repayments of $5,506,000. In accordance with the definition in the regulations, expenditures include the interest cost on the debt, while debt payments are the principal repayments on the debt.

  For 2011, the ratio indicates that revenues exceed expenditures and debt repayments by about 68%. By policy, the net revenue or surplus is used to fund transfers to the General Operating Fund, with the balance used to fund future Utility capital requirements. This ratio indicates that the Utility is recovering its operating costs as well as providing investment for future capital requirements. The ratio is projected to increase over the next several years as additional funding is generated to fund large capital projects such as the Wastewater Treatment Plant Expansion, along with on-going requirements such as infrastructure investment.

- Information on the current reserves and deferred revenue, capital plans for infrastructure projects and the sources of funding for the capital projects are detailed in the Utility Capital Program section of this document.

Capital Requirements and Funding

Regina's location, in a sensitive natural environment far from a major water source, affects the standards and costs for water supply and wastewater treatment and disposal. Additional information on the Utility services and systems in Regina is provided in the Introduction and Expenditure Sections of this document and the Water and Sewer Utility Business Plan.

The 2011 Utility Capital Budget totals $69.1 million with the 2011 – 2015 Utility Capital Budget totaling $343.6 million over five years. The proposed five-year capital program is approximate $61 million more than the five-year capital program approved in 2010; an increase of about 22%. While these are significant expenditures, they are not unreasonable considering recent construction cost escalations, and that the estimated replacement cost of the entire system exceeds $3.5 billion.

While the capital investment proposed for 2011 to 2015 is significant, the long term requirements of the system will continue to put pressure on rate and debt requirements. The capital program for the next five years is focused on addressing the need to upgrade plants, invest in approved development, and manage essential infrastructure work, including collecting infrastructure condition data to support future decisions.

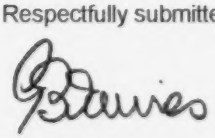
A significant amount of capital investment has been deferred to 2016 and beyond, to limit the total maximum debt to approximately $173 million. The effects of these deferrals causes concern in relation to potential future rate increases and the amount of debt potentially required, particularly in relation to the existing maximum borrowing capacity of the City ($200 million). These limitations and issues may be manageable over time, but they create risk for the City.

Capital requirements include an expansion to the Wastewater Treatment Plant to meet the Federal Government requirements under *The Canadian Environmental Protection Act* and *The Fisheries Act* as well as to comply with Saskatchewan Environment Regulations. Improvements are also required under the Provincial Water Quality Standards. Capital investments in the range of $146 million are required over the next five years to upgrade and expand the City's wastewater treatment plant to meet more stringent provincial and federal regulations. While Utility rates were increased in 2008 – 2010 to begin to address these and other capital pressures, the timing and magnitude of the increased revenue is insufficient to offset the timing and financial impact associated with such regulatory changes and other ongoing capital improvements.

While discussions continue with the federal and provincial governments on the new regulations and financial impact of the wastewater treatment plant expansion to meet those regulations, there is no certainty that such discussions will result in a shared funding agreement. Should no substantial funding be provided by other levels of government, the City will need to re-evaluate the proposed programs and budgets for 2012 – 2015 for further possible deferrals in capital investments, increased utility rates, alternative funding/delivery mechanism, and/or potential reductions in level of service to Utility customers.

Maintenance of the water, wastewater and drainage systems is a duty of the City in the interest of public health and safety. Aging infrastructure and changing regulatory standards contribute to the increasing need for revenue, which result in a requirement to increase rates. The City has a duty to be responsible stewards of these essential utilities to promote the health, well being and economic opportunity of the community.

Respectfully submitted,



Glen B. Davies
City Manager

Introduction

Utility Operating Budget Summary ($000's)

Details ($000's)	2010 Budget	2010 Actual	**2011 Budget**	Change 2010 to 2011 Dollar Change ($)	Change 2010 to 2011 Percent Change (%)
Operating Revenue:					
Water	38,984.3	37,499.2	**42,006.9**	3,022.6	7.8
Wastewater	28,812.3	28,098.7	**31,541.0**	2,728.7	9.5
Drainage	8,784.0	8,885.6	**9,775.9**	991.9	11.3
Other	486.8	3,758.3	**3,683.4**	3,196.6	656.7
Total Operating Revenue	77,067.4	78,241.8	**87,007.2**	9,939.8	12.9
Operating Expenditures:					
Water, Wastewater & Drainage Operations and Construction	22,449.2	21,847.7	**23,833.2**	1,384.0	6.2
Wastewater Treatment	5,283.5	5,468.4	**5,696.7**	413.2	7.8
Engineering and Operations	6,512.9	6,075.2	**6,727.7**	214.8	3.3
Utility Administration	7,106.8	6,809.8	**7,530.4**	423.6	6.0
Transfer to General Operating	5,873.9	5,873.9	**6,376.9**	503.0	8.6
Debt Costs	8,405.5	8,374.4	**8,154.0**	(251.5)	(3.0)
Total Operating Expenditures	55,631.8	54,449.4	**58,318.9**	2,687.1	4.8
Transfer to General Utility Reserve	21,435.6	23,792.4	**28,688.3**	7,252.7	33.8
Total Expenditures and Transfers	77,067.4	78,241.8	**87,007.2**	9,939.8	12.9

2011 Budget Overview

The 2011 Water and Sewer Utility Operating and 2011 – 2015 Utility Capital Budgets reflect Regina's commitment to maintaining safe and secure Utility operations. Across North America, water and sewer rates are increasing as utilities face challenges relating to:

- assessment and replacement of aging infrastructure
- expansion of capacity
- improvements required to meet enhanced and/or more stringent regulations and standards.

The total capital investments proposed for 2011-2015 are approximately $343.6 million. While the capital investment proposed for 2011 to 2015 is significant, the long term requirements of the system will continue to put pressure on rate and debt requirements. The capital program for the next five years is focused on addressing the need to upgrade plants, invest in approved development, and manage essential infrastructure work, including collecting infrastructure condition data to support future decisions.

A significant amount of capital investment has been deferred to 2016 and beyond, to limit the total maximum debt to approximately $173 million. The effects of these deferrals causes concern in relation to potential future rate increases and the amount of debt potentially required, particularly in relation to the existing maximum borrowing capacity of the City ($200 million). These limitations and issues may be manageable over time, but they create risk for the City.

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While discussions continue with the federal and provincial governments on the new regulations and financial impact of the wastewater treatment plant expansion to meet those regulations, there is no certainty that such discussions will result in a shared funding agreement. Should no substantial funding be provided by other levels of government, the City will need to re-evaluate the proposed programs and budgets for 2012 – 2015 for further possible deferrals in capital investments, increased utility rates, alternative funding/delivery mechanisms, and/or potential reductions in level of service to Utility customers.

In 2011, the Utility has budgeted for $1.465 million in provincial grant revenue from the Saskatchewan Infrastructure Growth Initiative Program (SIGI). This revenue is equivalent to the debt servicing cost for $43.1 million in debt financing originally provided by the SIGI Program to finance the Global Transportation Hub. This funding was transferred to the Utility in 2010.

In addition, $1.6 million has been budgeted for interest earned on investments.

In 2011, after the proposed 9% increase, the price of a cubic metre of water would be $1.24. This volume of water is equivalent to two thousand 500 millilitre bottles, which would cost about $3,000.

2011 Budget Process

The Utility contributes strongly to the Vision outcomes of Sustainability and Harmony, with the provision of safe drinking water and sustainable stewardship of surrounding watersheds as basic needs of the community to thrive.

As part of the effort to achieve this vision, the Administration developed a corporate strategic plan for 2008 through 2012 and work continues on a performance management process to align with City Council's strategic direction.

The Corporate Strategic Plan - *Accelerating Excellence* - identified four strategic priorities:

- Managing Growth and Community Development
- Strengthening City Infrastructure and Managing Assets
- Achieving Operational Excellence
- Ensuring Organizational Capacity and Effectiveness

The budget process always involves difficult choices. A key aspect of the budget process is that City Council is making choices on behalf of the community. With the limited resources available, it is important that each year's budget process involve the establishment of priorities. Many Canadian cities are developing multi-year strategic plans to help guide the resource allocation process. Building on the strength of work carried out over the past few years, the 2011 budget was developed based on priorities established through City Council's Vision for Regina, the Corporate Strategic Plan and an assessment of future issues and opportunities faced by the organization.

The approach to developing the 2011 Budget focused on identifying strategic priorities and allocating resources to those priorities to avoid having budget limitations drive the strategy. Divisions identified requirements for ongoing and one-time initiatives and evaluated them according to the strategic priorities. Divisions also identified opportunities where existing resources could be reallocated toward the strategic priorities.

Corporate Strategic Planning and Performance Management Process

In early 2007, City Council updated its Vision for Regina as follows:

Imagine Regina 2020
Canada's most...
Vibrant,
Inclusive,
Attractive,
Sustainable community
Where people live in Harmony
And Thrive in opportunity.

Corporate Strategic Plan

In November 2007, the Executive Leadership Team endorsed in principle our first five-year corporate strategic plan: Accelerating Excellence, 2008-2012. It is the highest level of planning in the Corporation and it represents a roadmap for the entire organization. It takes direction from Council and communicates our Vision, Mission, Values, Strategic Priorities, Key Areas of Focus and Outcomes enabling the Divisions of our City to develop and align their business plans. Combined, this forms the "line of sight" for the community, Council and employees.

Background

The Core Services Review that was completed in 2004 recommended that the City of Regina develop a corporate strategic plan and a corporate performance management program. The Core Services Review final report stated[1]:

> "A theme that repeated itself throughout the core services review focused on the lack of a strategic link between the Community Vision that [had] been created by Council and the activities of the municipal corporation. Articulated in various ways, there was a lack of understanding about how the municipal corporation itself and the many service areas within it were meant to support and realize that Vision."

To establish the strategic link, and galvanize our efforts, the City of Regina undertook a strategic planning process to strengthen the relationship between the community, Council and our employees in keeping with our Accountability Framework. This framework demonstrates that both Council and the

[1] "Final Report: Core Services Review", TkMC, November 29, 2004

administration have a role in strategic planning – Council sets the Vision, the administration develops strategic and business plans to align their activity to the Vision.

City of Regina Accountability Framework

Business Planning

During 2008, divisional business planning began using the corporate strategic framework as a basis for planning. In addition to this "top-down" approach, Divisions also incorporated their knowledge of customer and citizen priorities, facility and infrastructure requirements, and their daily analysis of risks and opportunities resulting from ongoing operations – a more "bottom-up" approach. The two approaches working together ensure that the corporate strategic approach will integrate into Divisional business plans that are both strategic and responsive.

As planning cascades through the organization, the level of engagement and detail will become increasingly refined. Participants in the planning sessions are cross functional to ensure an integrated approach and a 'de-siloing' of the organization.

Some areas within the City of Regina have undertaken business planning in the past. What is new for these groups is that they now have a longer term corporate Vision, Mission, Values and Strategic Priorities to provide better context for their planning efforts.

In 2010, the first Water and Sewer Utility Business Plan was documented to capture the current state of the Utility business and outlines how the Utility supports the City's goals. This plan also establishes the foundation for ongoing evolution and improvement of the Utility business. The Water and Sewer Utility: 2010-2011 Business Strategy, along with the Corporate Strategic Plan and pertinent Division and Department business plans, guided the development of the 2011 Utility Budget.

Utility Service Overview

The Water and Sewer Utility provides water, wastewater and drainage services primarily to customers in Regina. The services provided through the Utility include:

- **Water Supply, Pumping and Distribution**

  The water system provides water for residential, institutional, commercial and industrial customers as well as water for fire protection. The system serves a population of approximately 200,000 including some customers outside the City limits. Service goals include:

  - Providing water that meets or exceeds Provincial water quality standards and objectives.
  - Providing water at adequate pressure and in sufficient quantity to satisfy the requirements for domestic and commercial use, irrigation and fire protection.
  - Identifying and implementing improvements to the water system through long range planning, monitoring, improved operation, capital works and new technology.
  - Participating in Communities of Tomorrow and National Research Council's Centre for Sustainable Infrastructure Research to develop new technologies and improve practices.

- **Wastewater Collection and Treatment**

  The wastewater system collects wastewater from all residential, institutional, commercial and industrial customers in the City, and treats wastewater to meet Provincial and Federal environmental regulations and industry standards. Service goals include:

  - Collecting domestic, commercial and industrial wastewater in the City and reliably delivering it to wastewater treatment facilities.
  - Producing a treated wastewater effluent that is biologically and chemically safe for the environment and meets the requirements of the provincially issued operating permit.
  - Ensuring pollutants removed from the wastewater are treated and disposed of in an environmentally responsible manner.

- **Drainage**

  The drainage system controls water runoff resulting from rainfall and melting snow in and around the city. The system serves approximately 63,000 residential, institutional, commercial and industrial properties. Service goals include:

  - Operating and maintaining the drainage system to control run-off water within the city to minimize inconvenience, property damage and danger to the public.
  - Monitoring the potential for flood conditions in Wascana Creek and the storm channels and carrying out flood control measures as required.
  - Providing environmental monitoring of storm water quality.

The Water and Sewer Utility is responsible for diverse infrastructure including water mains, storage reservoirs, pumping stations, building service connections, wastewater treatment plant, wastewater and storm drainage sewers, and drainage channels and creeks. The City of Regina is also a joint owner of the Buffalo Pound Water Treatment Plant with the City of Moose Jaw.

Regional Setting

Regina's location is a sensitive natural environment and its landlocked status is unique among major

Canadian cities. Regina's location impacts the standards and costs for water supply and wastewater treatment and disposal. The map on the next page provides an illustration of the regional setting.

Regina's water supply originates with snow melt and rainfall in the eastern Rocky Mountains that feed the tributaries of the South Saskatchewan River. Buffalo Pound Lake is the source of Regina, Moose Jaw and several surrounding community's treated water supply.

Wascana Creek is a seasonal stream that originates to the east of Regina and flows through the City collecting stormwater run-off and treated wastewater effluent. For much of the year these sources are the only water that feeds Wascana Creek, and without these sources, the Creek would be dry.

The Utility's water supply and wastewater treatment systems are intended to provide treatment that is appropriate to its natural setting and to minimize the city's influence on the receiving environment.

Regina is the centre of an economic region comprised of approximately 40 communities. Initiatives are underway to strengthen partnerships and to collaborate on mutual opportunities and interests. Regina's Utility systems provide some regional services and over time their role may increase.

Regulatory Environment

Saskatchewan Watershed Authority is responsible for management of Saskatchewan's surface water and ground water resources. The Authority regulates the allocation of water, establishes management plans for the province's river basins and is responsible for land drainage and wetland preservation and enhancement.

Saskatchewan's Ministry of Environment regulates water supply and distribution, and wastewater collection, treatment and disposal. Permits for the construction and operation of water and wastewater systems require specific standards to protect human health, to ensure consistent water quality, and to minimize impacts on the natural environment. Requirements outlined in the provincial regulations include mandatory operator certification, routine facility inspections, testing and reporting to ensure compliance.

The Federal Government's Fisheries Act prohibits the discharge of any "deleterious substance" that may affect fish or fish habitat. Ammonia is designated a "toxic" substance that is part of the federal governments proposed national standards to regulate municipal wastewater effluents. The Utility's wastewater treatment plant (WWTP) requires a capital upgrade to meet the acute toxicity requirement.

The provinces may impose additional regulations beyond the federal requirements and the Province of Saskatchewan does require the Utility to meet standards beyond the proposed federal standard. Utility staff and Saskatchewan Ministry of Environment are in broad agreement on the principle that treated effluent standards for the Utility's upgraded wastewater treatment plant should consider environmental effects in the downstream environment. To address this principle, the Utility continues to carry out a significant monitoring program to document current conditions and help project future conditions in the downstream environment as well as initiating engineering for the WWTP upgrade. Should the Province decide to make standards even more stringent, further significant capital costs would be required. The Utility supports the principle of shared fiscal responsibility with respect to protection of the environment.

Although not a regulation, Regina's City Council passed a resolution in 2008 to reduce greenhouse gas emissions (GHG) 15% below 1990 levels by 2012. It is recognized that the Utility, in particular pumping and treatment operations, accounts for approximately 50% of the corporation's overall GHG emissions. The feasibility of alternatives and associated costs are being considered to achieve reductions that are largely realized by decreasing energy consumption or changing the energy source.

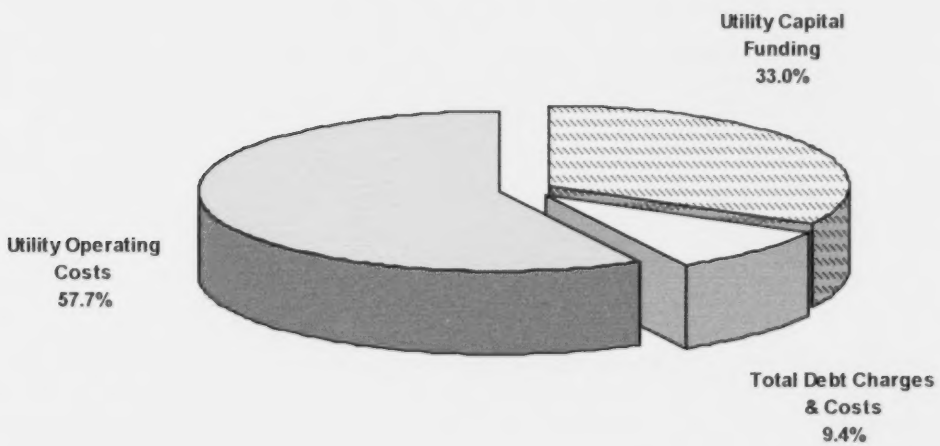
Revenues

Utility Operating Revenues

Utility Operating Revenue Summary ($000's)

Revenue Details ($000's)	2010 Budget	2010 Actual	2011 Budget	Change 2010 to 2011 Dollar Change ($)	Change 2010 to 2011 Percent Change %
Water Revenue					
Metered Water Charges	38,478.7	37,083.6	**41,531.9**	3,053.2	7.9
Unmetered Water Charges	208.6	41.4	**130.0**	(78.6)	(37.7)
Other Water Service Charges	297.0	374.2	**345.0**	48.0	16.2
Subtotal	38,984.3	37,499.2	**42,006.9**	3,022.6	7.8
Wastewater Revenue					
Wastewater Charges	28,762.3	27,997.0	**31,441.0**	2,678.7	9.3
Wastewater Service Surcharge	50.0	101.7	**100.0**	50.0	100.0
Subtotal	28,812.3	28,098.7	**31,541.0**	2,728.7	9.5
Drainage Infrastructure Levy	8,784.0	8,885.6	**9,775.9**	991.9	11.3
Other Revenues:					
Provincial Grant - SIGI	-	1,107.5	**1,465.4**	1,465.4	100.0
Late Payment & Transfer Charges	230.0	232.0	**255.0**	25.0	10.9
Claims Revenue	42.0	30.1	**22.0**	(20.0)	(47.6)
Other Revenues	214.8	788.7	**341.0**	126.2	58.8
Interest Earned on Investments		1,600.0	**1,600.0**	1,600.0	100.0
Subtotal	486.8	3,758.3	**3,683.4**	3,196.6	656.7
Total Utility Revenues	**77,067.4**	**78,241.8**	**87,007.2**	**9,939.8**	**12.9**

Use of 2011 Utility Revenue



Utility Rates and Rate Policies

Section 22.3 of *The Cities Regulations* requires Council to adopt a rate policy that sets out the rates or fees to be charged to consumers for the use of water. The policy must include the method used to determine those rates or fees. In establishing Utility rates, the following policies have been adopted in the past by City Council:

1. Utility rates are to be established such that they are sufficient, based on long term projections, to fully fund Utility operating costs, interest cost and debt repayments, capital requirements, and transfer policies, taking into account the operating and infrastructure requirements of the Utility required to meet the service goals of the Utility, as determined by City Council or prescribed by legislation. The objectives for the Utility's rate structure are:

    - **Financial Self Sufficiency** – Utility rates must generate revenue adequate to meet all operating and capital costs of the Utility in both the short and the long term.

    - **Conservation** – Utility rates should encourage customers to use water responsibly.

    - **Reduction of Peak Demand** – The Utility rates should encourage water conservation during summer months, reducing the need for infrastructure investment and higher rates.

    - **Equity** – The Utility rates should result in a charge to customers according to the cost of services utilized.

2. The rate structure for water and wastewater will include a base fee that varies according to the size of the water meter. The variation in the base rate by meter size will be based on the schedule recommended by the American Water Works Association (AWWA). The ratios for the base rate based on meter size are shown in the following table.

Water and Wastewater Base Fee Ratios

Meter Size	AWWA Standard Ratio
15 mm	1.0
18 mm	1.0
25 mm	1.4
40 mm	1.8
50 mm	2.9
75 mm	11
100 mm	14
150 mm	21
200 mm	29

3. The rate structure for water and wastewater will include a uniform rate for each cubic metre of water consumed and each cubic metre of deemed wastewater flow. For water, the uniform rate is applied to all consumption. For wastewater, the deemed volume is a percentage of the water consumption. The percentages are:

    - For residential customers, the wastewater volume is 82% of the water consumption;

    - For multiple unit residential properties, the percentage is 95% of the water consumption; and,

    - For institutional, commercial and industrial properties, the percentage is 98% of the water consumption.

4. The rate structure for the storm drainage infrastructure levy will be based on the size of the property, with larger properties paying a higher levy. The ratios approved by City Council in 2001 (CR01-189) are shown in the following table. The drainage levy applies irrespective of whether the property is connected to the water or wastewater systems.

Drainage Infrastructure Rate Ratios

Area of Property	Rate Ratio
0 to 1,000 m^2	1.0
1,001 to 3,000 m^2	2.0
3,001 to 5,000 m^2	4.0
5,001 to 7,000 m^2	6.0
7,001 to 9,000 m^2	8.0
9,001 to 11,000 m^2	10.0
11,001 to 13,000 m^2	12.0
13,001 to 15,000 m^2	14.0
15,001 to 17,000 m^2	16.0
17,001 to 19,000 m^2	18.0
19,001 to 21,000 m^2	20.0
21,001 to 23,000 m^2	22.0
23,001 to 25,000 m^2	24.0
25,001 to 27,000 m^2	26.0
27,001 to 29,000 m^2	28.0
29,001 to 31,000 m^2	30.0
Over 31,000 m^2	32.0

5. **In the setting of rates, the Utility must at minimum present a balanced budget**, with any surplus intended for the following purposes:

   - **Transfer to the General Utility Reserve** –The purpose of the reserve is to provide a source of financing for capital projects. The balance of the Utility's surplus, after other transfers, is transferred to the General Utility Reserve. For 2011, the transfer is budgeted at **$28.7 million.** Through the use of the Utility Model, an overall requirement for capital funding is established. Utility rates are set in order to provide sufficient surpluses to cover the capital costs over the next twenty years.

     In the event that the Utility incurs an operating deficit in a given year, the deficit would also be funded from the reserve.

6. **The Utility Operating Expenses also include a transfer to the City's General Operating Fund in lieu of taxes.** Any organization or Utility operating in a municipality would be required to pay the municipality either property taxes or an 'Access Fee' for the rights to use or access civic assets in the delivery of service. Policies on these types of fees vary from city to city. Calgary's Utility pays 10% of revenue plus a 10% return on equity. The City of Saskatoon's Utility pays a franchise fee based on 10% of revenue. Winnipeg's is also 10%, with dividends paid. Moose Jaw's rate is 5% of revenue. Regina's transfer is the total of the following amounts:

   - 7.5% of the previous years budgeted revenues for billed water consumption, wastewater charges and drainage infrastructure levy; and,

   - The amount of $675,000, estimated to be 3/7^{ths} of the GST rebate received by the Utility. This amount is the additional rebate provided by the Federal Government starting in 2004.

   For 2011, these amounts total $6,376,900.

City Council's practice has been to establish Utility rates every three years, with a three-year schedule of rates adopted. New rates for water, wastewater and drainage for 2011 - 2013 have been proposed in conjunction with the Utility Budget.

The proposed Utility rates for 2011 through 2013 are shown in the following tables. Rates are billed monthly and are based on a daily fixed charge.

Water Rates

	Previously Approved Rate	Proposed Rate Schedule		
	2010 ($)	**2011 ($)**	2012 ($)	2013 ($)
Daily Base Fee:				
15 mm/18 mm water meter	0.48	**0.52**	0.57	0.62
25 mm water meter	0.67	**0.73**	0.80	0.87
40 mm water meter	0.86	**0.94**	1.03	1.12
50 mm water meter	1.39	**1.51**	1.65	1.80
75 mm water meter	5.28	**5.72**	6.27	6.82
100 mm water meter	6.72	**7.28**	7.98	8.68
150 mm water meter	10.08	**10.92**	11.97	13.02
200 mm water meter	13.92	**15.08**	16.53	17.98
Volume Charge:				
Charge per m^3	1.14	**1.24**	1.35	1.47

Wastewater Rates

	Previously Approved Rate	Proposed Rate Schedule		
	2010 ($)	**2011 ($)**	2012 ($)	2013 ($)
Daily Base Fee:				
15 mm/18 mm water meter	0.37	**0.40**	0.44	0.48
25 mm water meter	0.52	**0.56**	0.62	0.67
40 mm water meter	0.67	**0.72**	0.79	0.86
50 mm water meter	1.07	**1.16**	1.28	1.39
75 mm water meter	4.07	**4.40**	4.84	5.28
100 mm water meter	5.18	**5.60**	6.16	6.72
150 mm water meter	7.77	**8.40**	9.24	10.08
200 mm water meter	10.73	**11.60**	12.76	13.92
Volume Charge:				
Charge per m^3	1.01	**1.11**	1.21	1.32

Storm Drainage Rates

Daily Base Fee	Previously Approved Rate 2010 ($)	Proposed Rate Schedule 2011 ($)	2012 ($)	2013 ($)
0 to 1,000 m^2	0.32	**0.35**	0.38	0.41
1,001 to 3,000 m^2	0.64	**0.70**	0.76	0.82
3,001 to 5,000 m^2	1.28	**1.40**	1.52	1.64
5,001 to 7,000 m^2	1.92	**2.10**	2.28	2.46
7,001 to 9,000 m^2	2.56	**2.80**	3.04	3.28
9,001 to 11,000 m^2	3.20	**3.50**	3.80	4.10
11,001 to 13,000 m^2	3.84	**4.20**	4.56	4.92
13,001 to 15,000 m^2	4.48	**4.90**	5.32	5.74
15,001 to 17,000 m^2	5.12	**5.60**	6.08	6.56
17,001 to 19,000 m^2	5.76	**6.30**	6.84	7.38
19,001 to 21,000 m^2	6.40	**7.00**	7.60	8.20
21,001 to 23,000 m^2	7.04	**7.70**	8.36	9.02
23,001 to 25,000 m^2	7.68	**8.40**	9.12	9.84
25,001 to 27,000 m^2	8.32	**9.10**	9.88	10.66
27,001 to 29,000 m^2	8.96	**9.80**	10.64	11.48
29,001 to 31,000 m^2	9.60	**10.50**	11.40	12.30
Over 31,000 m^2	10.24	**11.20**	12.16	13.12

Utility Customers

The Utility provides services to a population of approximately 200,000 including service to some customers and communities outside of the City limits. The following tables provide information on the number and categories of Utility customers.

Water and Sewer Utility Customers

	Water Customers	Wastewater Customers	Drainage Customers
Residential	59,069	59,055	58,713
Multi-Unit Residential	839	834	818
Commercial	3,176	3,015	3,206
Irrigation	308	37	-
Total	63,392	62,941	62,737
Within City Limits	63,250	62,903	62,737
Outside City Limits	142	38	-
Total	63,392	62,941	62,737

Water Customers

Water	Residential	Multi-Unit Residential	Commercial	Irrigation	Total
15 mm - 5/8"	56,248	26	1,202	11	57,487
18 mm - 3/4"	2,673	230	1,085	28	4,016
25 mm - 1"	133	359	406	90	988
40 mm - 1.5"	15	108	154	57	334
50 mm - 2"	-	59	187	111	357
75 mm - 3"	-	57	118	8	183
100 mm - 4"	-	-	16	3	19
150 mm - 6"	-	-	6	-	6
200 mm - 8"	-	-	2	-	2
Total	59,069	839	3,176	308	63,392

Wastewater Customers

Wastewater	Residential	Multi-Unit Residential	Commercial	Irrigation	Total
15 mm - 5/8"	56,248	26	1,167	7	57,448
18 mm - 3/4"	2,661	230	1,037	3	3,931
25 mm - 1"	132	359	381	12	884
40 mm - 1.5"	14	108	146	6	274
50 mm - 2"	-	54	153	7	214
75 mm - 3"	-	57	113	2	172
100 mm - 4"	-	-	11	-	11
150 mm - 6"	-	-	5	-	5
200 mm - 8"	-	-	2	-	2
Total	59,055	834	3,015	37	62,941

Drainage Customers

Drainage		Residential	Multi-Unit Residential	Commercial	Total
0 to 1,000 m^2	1	58,708	384	1,353	60,445
1,001 to 3,000 m^2	2	2	310	809	1,121
3,001 to 5,000 m^2	3	-	46	322	368
5,001 to 7,000 m^2	4	1	29	167	197
7,001 to 9,000 m^2	5	-	11	110	121
9,001 to 11,000 m^2	6	-	11	75	86
11,001 to 13,000 m^2	7	1	10	52	63
13,001 to 15,000 m^2	8	-	4	55	59
15,001 to 17,000 m^2	9	-	1	44	45
17,001 to 19,000 m^2	10	-	3	26	29
19,001 to 21,000 m^2	11	1	4	32	37
21,001 to 23,000 m^2	12	-	2	18	20
23,001 to 25,000 m^2	13	-	1	13	14
25,001 to 27,000 m^2	14	-	1	9	10
27,001 to 29,000 m^2	15	-	-	11	11
29,001 to 31,000 m^2	16	-	-	6	6
Over 31,000 m^2	17	-	1	104	105
Total Properties		58,713	818	3,206	62,737

Utility Rate History and Comparisons

The following tables detail the history of Utility rates since 2002, and the annual cost and annual cost increase for a sample residential customer with 360 cubic metres of water consumption a year, along with the proposed rates for 2011 through 2013.

Water Rate History

Year	Fixed Annual Charge ($)	Volume Charge ($/Cubic Metre)	Cost for Sample Customer: Annual Charge for 360 Cubic Metres ($)	Cost for Sample Customer: Per Cent Increase (%)
2002	105.00	0.77	382.20	5.3
2003	109.50	0.79	393.90	3.1
2004	117.00	0.81	408.60	3.7
2005	123.00	0.83	421.80	3.2
2006	129.00	0.85	435.00	3.1
2007	135.05	0.88	451.85	3.9
2008	146.00	0.96	491.60	8.8
2009	160.60	1.05	538.60	9.6
2010	175.20	1.14	585.60	8.7
2011	**189.80**	**1.24**	**636.20**	8.6
2012	208.05	1.35	694.05	9.1
2013	226.30	1.47	755.50	8.9

Wastewater Rate History

Year	Fixed Annual Charge ($)	Volume Charge ($/Cubic Metre)	Cost for Sample Customer: Annual Charge for 360 Cubic Metres ($)	Cost for Sample Customer: Per Cent Increase (%)
2002	76.50	0.65	268.38	5.7
2003	81.00	0.67	278.78	3.9
2004	87.00	0.69	290.69	4.3
2005	93.00	0.72	305.54	5.1
2006	99.00	0.75	320.40	4.9
2007	102.20	0.78	332.46	3.8
2008	116.80	0.85	364.07	9.5
2009	124.10	0.93	398.64	9.5
2010	135.05	1.01	433.20	8.7
2011	**146.00**	**1.11**	**473.67**	9.3
2012	160.60	1.21	517.79	9.3
2013	175.20	1.32	564.86	9.1

Drainage Infrastructure Levy Rate History

Year	Property Category	Annual Levy ($)	Percentage Increase (%)
2002	1,000 square metres or less	49.20	2.5
2003	1,000 square metres or less	60.00	22.0
2004	1,000 square metres or less	72.00	20.0
2005	1,000 square metres or less	78.00	8.3
2006	1,000 square metres or less	84.00	7.7
2007	1,000 square metres or less	91.25	8.6
2008	1,000 square metres or less	98.55	8.0
2009	1,000 square metres or less	105.85	7.4
2010	1,000 square metres or less	116.80	10.3
2011	**1,000 square metres or less**	**127.75**	9.4
2012	1,000 square metres or less	138.70	8.6
2013	1,000 square metres or less	149.65	7.9

Customer Impact of Utility Rates

New rates for water, wastewater and drainage for 2011 - 2013 have been submitted in conjunction with the Utility Budget. Examples of the impact of the recommended 2011 rates are provided below.

Average Home Owner

The following chart illustrates the impact of the proposed 2011 rates on a homeowner who uses 360 cubic metres of water per year. The water consumption is typical for a family of two adults and two children, in a home with two bathrooms, a dishwasher and washing machine, on a lot with typical landscaping for Regina. The cost increase resulting from the 2011 rates is about $8.50 per month for the average homeowner.

2011 Rate Impact - Average Home Owner

	2010 ($)	2011 ($)	Dollar Change ($)	Per Cent Change (%)
Water				
Annual Basic Charge	175.20	**189.80**	14.60	
Annual Volume Charge	410.40	**446.40**	36.00	
Total Annual Water	585.60	**636.20**	50.60	8.64
Wastewater				
Annual Basic Charge	135.05	**146.00**	10.95	
Annual Volume Charge	298.15	**327.67**	29.52	
Total Annual Wastewater	433.20	**473.67**	40.47	9.34
Annual Drainage Infrastructure Levy	116.80	**127.75**	10.95	9.38
Total Annual Utility Charges	1,135.60	**1,237.62**	102.02	8.98

Sample Commercial Customer

The following chart illustrates the impact of the proposed 2011 rates on a commercial customer with a 40 mm meter that uses 3,000 cubic metres of water per year, with a property size in the range of 3,001 to 5,000 square metres. This water consumption would be typical for a strip-mall with a restaurant and a hair salon with a parking lot and minimal landscaping.

2011 Rate Impact - Sample Commercial Customer

	2010 ($)	2011 ($)	Dollar Change ($)	Per Cent Change (%)
Water				
Annual Basic Charge	313.90	**343.10**	29.20	
Annual Volume Charge	3,420.00	**3,720.00**	300.00	
Total Annual Water	3,733.90	**4,063.10**	329.20	8.82
Wastewater				
Annual Basic Charge	244.55	**262.80**	18.25	
Annual Volume Charge	2,969.40	**3,263.40**	294.00	
Total Annual Wastewater	3,213.95	**3,526.20**	312.25	9.72
Annual Drainage Infrastructure Levy	467.00	**511.00**	44.00	9.42
Total Annual Utility Charges	7,414.85	**8,100.30**	685.45	9.24

Rate Comparison - Sample Residential Customer

The following chart compares the 2010 rates for Regina and other cities for a sample residential customer. The sample customer is a home owner who uses 360 cubic metres of water per year. The water consumption is typical for a family of two adults and two children, in a home with two bathrooms, a dishwasher and washing machine, on a lot with typical landscaping for Regina.

Sample Residential Customer - 2010 Rates[1]

Utility Bill Details	Regina	Calgary	Edmonton	Saskatoon	Winnipeg
Water					
Annual Basic Charge	**$ 175.20**	$ 146.04	$ 65.04	$ 82.68	$ 55.00
Annual Volume Charge	**410.40**	477.65	553.03	305.12	464.40
Total Annual Water	**585.60**	623.69	618.07	387.80	519.40
Wastewater					
Annual Basic Charge	**135.05**	127.56	73.08	82.68	-
Annual Volume Charge	**298.15**	250.31	418.61	147.47	687.60
Total Annual Wastewater	**433.20**	377.87	491.69	230.15	687.60
Annual Drainage Infrastructure Levy	**116.80**	91.92	120.73	108.65	-
Total Annual Utility Charges	**$ 1,135.60**	$ 1,093.48	$ 1,230.49	$ 726.60	$ 1,207.00

Note:
1. 2011 Rates are not yet available for the majority of these cities.

Rate Comparison - Sample Commercial Customer

The following chart compares the 2010 rates for Regina and other cities for a sample commercial customer. The commercial customer has a 40 mm meter, uses 3,000 cubic metres of water per year, with a property size in the range of 3,001 to 5,000 square metres. This water consumption would be typical for a strip-mall with a restaurant and a hair salon with a parking lot and minimal landscaping.

Sample Commercial Customer - 2010 Rates[1]

Utility Bill Details	Regina	Calgary	Edmonton	Saskatoon	Winnipeg
Water:					
Annual Basic Charge	**$ 313.90**	$ 393.96	$ 198.00	$ 1,297.44	$ 124.10
Annual Volume Charge	**3,420.00**	2,992.20	2,829.66	1,974.87	3,544.96
Total Annual Water	**3,733.90**	3,386.16	3,027.66	3,272.31	3,669.06
Wastewater:					
Annual Basic Charge	**244.55**	127.56	73.08	1,297.44	-
Annual Volume Charge	**2,969.40**	1,981.50	3,488.40	1,480.09	5,730.00
Total Annual Wastewater	**3,213.95**	2,109.06	3,561.48	2,777.53	5,730.00
Drainage Infrastructure Levy	**467.00**	91.92	1,091.45	816.62	-
Total Annual Utility Charges	**$ 7,414.85**	$ 5,587.14	$ 7,680.59	$ 6,866.46	$ 9,399.06

Note:
1. 2011 Rates are not yet available for the majority of these cities.

Utility Operating
Expenditures

Utility Operating Expenditures

Utility Operating Expenditure Summary ($000's)

Expenditure Details ($000's)	2010 Budget	2010 Actual	2011 Budget	Change 2010 to 2011 Dollar Change ($)	Change 2010 to 2011 Percent Change (%)
Water, Wastewater & Drainage Operations and Construction					
Water Operations	10,823.4	10,629.4	**11,007.6**	184.2	1.7
Water & Sewer Construction	8,020.1	7,602.0	**8,465.2**	445.1	5.5
Sewer & Drainage Operations	3,605.7	3,616.3	**4,360.4**	754.7	20.9
Subtotal	22,449.2	21,847.7	**23,833.2**	1,384.0	6.2
Wastewater Treatment	5,283.5	5,468.4	**5,696.7**	413.2	7.8
Engineering & Operations					
Strategic and Business Services	1,547.3	1,258.8	**1,421.0**	(126.3)	(8.2)
Water, Wastewater Collection and Drainage Engineering	1,950.4	1,532.0	**2,150.3**	199.9	10.2
Environmental Engineering	1,180.7	948.2	**1,030.7**	(150.0)	(12.7)
Development Engineering	1,610.1	2,093.6	**1,887.0**	276.9	17.2
Facilities	224.4	242.6	**238.7**	14.3	6.4
Subtotal	6,512.9	6,075.2	**6,727.7**	214.8	3.3
Utility Administration					
Customer Service, Billing & Collection	3,587.3	3,290.3	**3,677.0**	89.7	2.5
Transfer to General Operating	5,873.9	5,873.9	**6,376.9**	503.0	8.6
Utility Administration Charge	3,519.5	3,519.5	**3,853.4**	333.9	9.5
Subtotal	12,980.7	12,683.7	**13,907.3**	926.6	7.1
Debt Costs	8,405.5	8,374.4	**8,154.0**	(251.5)	(3.0)
Total Utility Expenditures	**55,631.8**	**54,449.4**	**58,318.9**	**2,687.1**	4.8

Staffing Summary

FTE's by Department	2010[1]			2011			
	Permanent	Casual	Total	Permanent	Casual	Total	Change
Public Works	183.5	33.0	216.5	184.1	34.0	218.1	1.6
Planning & Development	16.8	1.6	18.4	16.8	1.6	18.4	-
Corporate Services	24.5	2.0	26.5	25.5	1.5	27.0	0.5
Office of the City Manager	9.8	0.4	10.2	9.4	0.2	9.6	(0.6)
Total	234.6	37.0	271.6	235.8	37.3	273.1	1.5

Note:
1. The 2010 staffing summary has been restated to correctly reflect staff allocated to capital budgets.

Analysis of Operating Budget Change from 2010 to 2011

Details of Operating Budget Changes *(continued on next page)*	($000's)
2010 Operating Budget	$ 55,631.8
1. Salaries and Benefits - Includes cost changes resulting from in-range progression increases, classification reviews, general employer benefit costs (EI, CPP, WCB, etc. which increase proportionate with salaries), the City's portion of increases in employee pension contributions and allowance for negotiated salary increase. (Base)	417.0
2. 2010 One Time Items - This represents one time items contained in the 2009 budget and includes Environmental Monitoring (-$100,000), Utility Business Planning (-$75,000), Wastewater Assessment (-$300,000), along with several smaller requests. (One-Time)	(775.0)
3. Allocations - Adjustment to allocations between the General Fund and the Utility, including Customer Service, Strategic and Business Services (Public Works), Development Engineering, and Environmental Engineering. (Base)	(247.6)
4. Power and Energy Costs - Increased energy costs for various operations including Wastewater Treatment Plant, Water Pumping, Wells, and Forcemain Operations. (Base)	108.6
5. Equipment Allocation Costs - Adjustment to equipment allocation costs, including correction of General Fund cost allocation error carried forward from 2009. (Base)	999.6
6. Utility Billing Postage - Increased postage rates along with increased number of billing accounts has resulted in increased costs to mail bills. (Base)	20.8
7. Fall Sweep Program - This program has previously been budgeted in the General Fund. As the benefits of this program are primarily to the Utility, the cost for the program has been transferred. (Base)	121.0
8. Distribution Pumping Program - Increase required to delver the distribution pumping program at the current level of service. (Base)	97.7
9. Liquid Alum and Polymer - Increased cost of material requirements for the Waste Water Treatment Plant, including liquid alum (aluminium sulphate), and Polymer, which are utilized on a continuous basis in the treatment of wastewater. (Base)	55.0
10. Purchase of Water - Increase in cost of water from Buffalo Pound Water Treatment Plant. (Base)	65.3
11. Pipes and Tubing - To cover rising costs associated with the supply and shipping of water & sewer pipe and tubing. (Base)	247.2
12 Lawn & Concrete Cuts - Increase in cost for internal forces to provide service to cut and repair lawn and concrete to support line repairs. (Base)	334.5
13. Adjustment from Operating to Capital - Reduction of Operating budget to reflect adjustments between the Operating and Capital budgets due to the implementation of Tangible Capital Asset accounting. This shift includes moving $406,200 in staffing costs (7.38 permanent FTE) along with $75,000 in allocated costs, as well as reallocating the budget for the replacement of PolyB connections ($192,000) and installation of Sewer Cleanouts($44,000). (Base)	(720.5)
14. Adjustment of Estimates - Increase to correct estimated budgets for Water and Sewer Construction ($327,800) and Development Engineering ($252,500) based on historical actuals. (Base)	580.3
15. Lift Station Operation and Maintenance - Increased resources to fund material and equipment requirements for the proper operation and maintenance of mechanical, electrical and control equipment utilized in Domestic and Storm Lift Stations. (On-going)	40.0
16. Water Quality Testing and Data Management - Increased resources to cover the costs of additional water quality testing, testing supplies, safety equipment, training and other minor equipment purchases. This funding will also cover the cost of new services to provide water quality data management services to schedule sampling, report test results, and provide reports.(On-going)	28.0
17. Sewer Jetting Standby - Increase funding to support standby and overtime costs to ensure availability of staff and timely response for blocked domestic sewer main calls. (On-going)	40.0

Details of Operating Budget Changes	($000's)
18. Contracted Services for Water Service Lines - Increased funding to support backup and emergency service levels for water service lines. (On-going)	21.8
19. Public Works Certification Training - Increase in funding for training. This funding will be directed towards ensuring that Public Works Utility staff will continue to meet all required certification levels. (On-going)	75.0
20. Hydrant Permit Process - Increased staff resources to manage the hydrant permit process for the spring sweep program. With this change, water provided for the spring street sweeping program in Roadways will be metered and billed to the Roadways program. This expense is fully offset by increase to the metered water revenue. (Increase 0.2 Casual FTE) (On-going)	10.4
21. Support for Operator Training - Increase overtime funding to allow doubling up of operations for a shadowing program to address succession planning issues. In addition to the ongoing requirement for overtime funding, this one-time request will fund the hiring of retired Wastewater Treatment Plant employees to provide operations relief and on-the-job training to help address succession planning issues. (Increase 2.0 Casual FTE) (One-Time/On-going)	155.2
22. Domestic Sewer Additives - This represents the City's one-third portion of funding for a pilot project to test the effectiveness of technology to provide pre-treatment of wastewater prior to reaching the Wastewater Treatment Plant. Results are intended to control grease and odour, reduce greenhouse gas emissions, and reduce electrical requirements at the plant. (0.2 Casual FTE) (One-Time)	60.0
23. Improved Water and Sewer Utility Management and Performance - To better plan for the future and limit risks in the short term additional investments is required for continued business planning and governance review; developing an asset management system with sustainable infrastructure investment strategies, and developing a performance rate review before rates are established in 2014. (One-time)	500.0
24. Reduction of Chemical Requirement - Operational changes at the Wastewater Treatment Plant have allowed for the elimination of Ferrous Chloride. (Efficiency)	(47.5)
25. Reduction of Bad Debt Expense - Improved delinquency processes have resulted in an on-going reduction in the value of Bad Debt write-offs. In the past, the value of the write-off was approximately 0.5% of annual revenue. This amount had dropped to approximately 0.3%. (Efficiency)	(85.0)
26. Pumping Efficiency - Reduced cost of electricity due to increased pumping efficiency by approximately 10% by replacing check valves at the Buffalo Pound pumping station. (Efficiency)	(20.0)
27. Domestic Sewer Jetting Efficiency - Reduction of sewer main preventative cleaning program in the three coldest months and increasing the program in the rest of the year provides efficiencies due to reduced equipment damage and shortened equipment warm-up time. (Efficiency)	(69.0)
28. Water Efficiency Program - Reduction of funding will allow for leakage management work to continue at the existing level. Additional program work will not be supported. (Reinvestment)	(15.7)
29. Flow Monitoring Program - This reduction eliminates funding for this program. Some work will procedure under the capital program for infrastructure renewal. (Reinvestment)	(15.7)
30. Administrative Charge - Increase in the administrative charge as per the policy. The charge is 5% of the prior year's budgeted revenue. (Base)	333.9
31. Debt Costs - This represents the change in total interest and principle payments for the Utility in 2010. (Base)	(251.5)
32. Transfer in Lieu of Taxes - Increase in Transfer to General Operating Fund in Lieu of Taxes. (Base)	503.0
33. Other miscellaneous costs include reinstatement of Communications budget, increased claims expense, software support and changes to allocated IT costs. (Base)	120.3
2011 Operating Budget	**$ 58,318.9**

Note:
Base request funding – represents an increase in cost necessary to maintain current investment levels.
On-going request funding – represents expenditures that would be ongoing past the current budget year.
One-Time request funding – represents one-time expenditures for the current budget year.
Efficiency – represents a reduction in cost due to operational improvements.
Reinvestment – represents a reduction in funding to be invested in higher priority work.

Water and Sewer Utility Description

Mandate

We will be recognized by our customers and beneficiaries for excellence in sustainable stewardship of our water resources and utility assets protecting public health, safety, property and the environment.

We strive to maintain current service levels by managing Utility services based on 3-5 year needs assessments with reasonable rate increases.

A brief overview of the purposes of each work area is outlined below.

Environmental Services Department (Public Works Division)
Provide wastewater treatment, solid waste management, environmental services, and engineering services for Regina to protect public health and enhance quality of life. This department includes the following branches:

- Wastewater Treatment Branch
- Environmental Engineering Branch

Water and Sewer Services Department (Public Works Division)
Provide design, construct, operate and maintain essential water, wastewater and drainage systems for Regina and surrounding communities to protect public health and property. This department includes the following branches:

- Water Operations Branch
- Water and Sewer Construction Branch
- Sewer and Drainage Operations Branch
- Water, Wastewater, and Drainage Engineering Branch

Strategic and Business Services Department (Public Works Division)
Provide strategic, engineering and business leadership for Public Works by delivering results through aligned planning; coordinated administration & communications; research & policy development and; performance & measurement reporting. The Utility budget for this department includes:

- 40% of the overall cost of the department

Development Engineering Department (Planning and Development Division)
Through planning, design, and review, we provide the new infrastructure our City needs to grow and thrive. The Utility budget for this department includes:

- Water, Wastewater, and Drainage Infrastructure Development Branch
- 40% of the rest of the department, excluding Roadways Infrastructure Development, is allocated to the Utility.

Finance Department (Corporate Services Division)
Provide accurate and timely billing and collection information to ensure the financial health of the Utility and to accomplish our commitments to customer satisfaction and business excellence. The budget for this department includes:

- Utility Billing Branch
- Direct charges for one FTE of Financial Analyst resources

Information Technology Department (Corporate Services Division)
Provide collaborative leadership and support in technology, information and services; enabling our customers to meet their business outcomes. The budget for this department includes:

- Application development staffing directly responsible for the Utility Billing system as well as 0.5 FTE of database administration resources.

Service Regina and Communications (Office of the City Manager)
For the Water & Sewer Utility, the Customer Service Centres are the link between the Corporation and our customers, while the Communications Branch provides public communications for the Utility. The Utility Budget includes:

- 40% of the cost of the Service Regina branch
- Direct charges for communications for the utility, along with one FTE of staff resources

Buffalo Pound Water Administration Board
The Board was formed as a partnership between the Cities of Moose Jaw and Regina and sells wholesale water to both Cities.

Water

Water System Overview

The water supply, pumping and distribution system provides water for residential and commercial use and fire protection. The system serves a population of approximately 200,000 including all residents and businesses in the city limits and a number of customers outside the city. Service goals include:

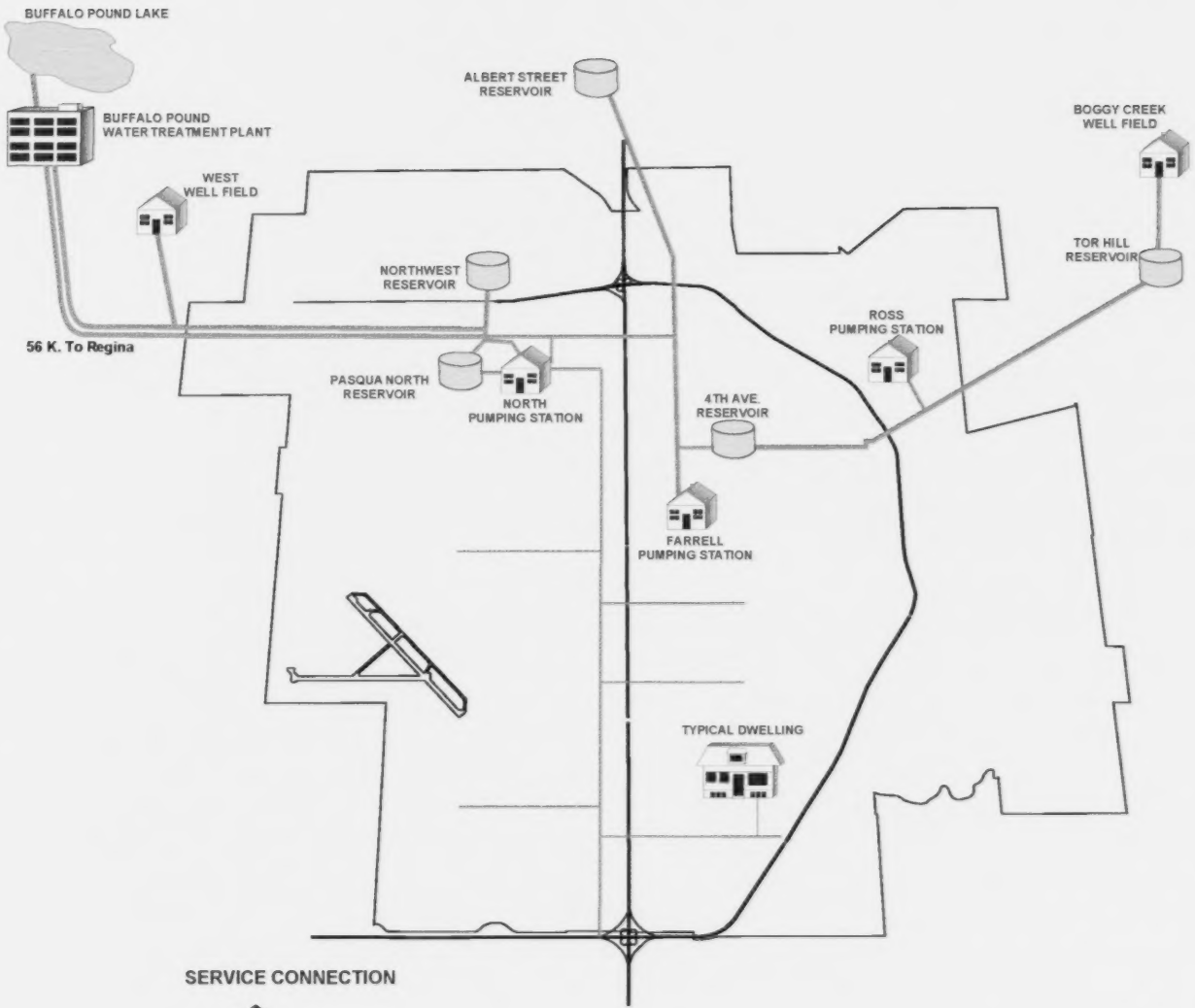
- Providing water that meets or exceeds Provincial water quality standards and objectives.
- Providing water at adequate pressure and in sufficient quantity to satisfy the requirements for domestic and commercial use, irrigation and fire protection.
- Identifying and implementing improvements to the water system through long range planning, monitoring, improved operation, capital works and new technology.
- Participating in Communities of Tomorrow and National Research Council's Centre for Sustainable Infrastructure Research to develop new technologies and improve practices.

Components of the water system shown in the map on page 24 include:

- **Buffalo Pound Lake and Wells** – All of the annual water needs are provided from Buffalo Pound Lake. There are wells available for backup purposes. The well water is chlorinated, but does not require further treatment to meet current health standards.
- **Buffalo Pound Water Treatment Plant** – Water from Buffalo Pound Lake is drawn and pumped three kilometres to the Buffalo Pound Water Treatment Plant, a facility owned jointly with the City of Moose Jaw. At the plant, the water is mixed with coagulants that cause algae, bacteria and other impurities to clump together so that they settle out of the water. The water is then filtered and chlorinated. During warmer weather, the water is passed through granular activated carbon to improve the taste and odour.
- **Supply Pipelines** – From the Buffalo Pound Water Treatment Plant, the water is pumped through a 56 km pipeline to the City's water distribution system. The pipeline has been twinned to provide increased capacity and reliability of the water supply. A number of other supply pipelines transport water from wells to reservoirs.
- **Reservoirs** – Five storage reservoirs are used to store water to meet peak demands and ensure that there is an adequate supply of water available for firefighting and high usage periods. The reservoirs have a combined usable storage capacity equal to about one and one-half days of average water use.
- **Pumping Stations** – There are three pumping stations (North, Farrell and Ross) that are used to pump water from reservoirs into the distribution system as necessary.
- **Distribution System** – The distribution system consists of over 1,070 kilometres of pipelines ranging in size from large 1,067 mm diameter trunk mains to 100 mm distribution pipes. The pipelines are made of various materials – AC, coated steel and polyvinyl chloride (PVC). The distribution system also includes over 6,000 valves that allow the water to be turned off to facilitate repairs and maintenance.
- **Service Connections** – Distribution pipes are connected to a customer's water line through a service connection.

- **Water Meters** – Water meters measure water consumption. A water meter replacement program was completed in 2004. The project included the installation of automated meter reading (AMR) equipment to transmit meter readings to a mobile data collection unit.

WATER SYSTEM



1. Service Connection (Curb Box)
2. Watermain

Water System Objectives

The Long Term Water Utility Study, initially completed in 1993, covered all aspects of the water system, including projected future water requirements, the condition of the existing system components, and a review of the system operations. The Study was adopted by City Council as the city's long term water supply plan. In 1998, a portion of the Study was updated and resulted in a decision to improve the Buffalo Pound supply pipeline and pumping system rather than construct a ground water treatment plant. A Study update was completed in 2006 and provided recommendations for water system improvements for the next 20 years.

As part of the Study, a number of objectives were established. These objectives continue to guide the water system operations today, and include:

- **Water Quality** – The City adopted the *Guidelines for Canadian Drinking Water Quality, 4th Edition* published by Health Canada as the basis for its water quality objectives. These are the most complete guidelines established in Canada. The standards, adopted by Saskatchewan Environment, regulate the operation of all waterworks in Saskatchewan.

  For parameters not included in the *Guidelines*, the City has adopted the most stringent level listed by other authorities. Some parameters are for substances for which there are aesthetic concerns rather than health concerns, such as iron, manganese and hardness. Other parameters are for substances to which health concerns have been linked but not proven, such as aluminum and trihalomethanes.

- **Water Conservation** – An enhanced Water Conservation Program was initiated in 1991 to reduce the per capita water consumption and the short term peak water demand. The City to date has been successful in meeting the targets that were set for the program.

- **Reliability** – The City established an objective for the reliability of delivery, defined as ensuring water will be available within the limits of minimal local disruptions for system maintenance and rare large-scale disruptions due to unforeseen catastrophe. Specific objectives are:

  - Mandatory water rationing should occur less than one year in ten.

  - Service should be restored within 24 hours in the event of local service disruptions such as water main breaks and connection problems.
  - All reasonable steps should be taken to ensure that large-scale disruptions do not occur. These steps include ensuring that there is sufficient redundancy in the system so that alternate facilities can be used in the event of a failure in part of the system.

  - Alternate power sources must be available in the event of a main power failure.

  - Hydrants should be installed and maintained to meet the requirements of the National Fire Code.

- **Water Pressure** – Water must be delivered to customers under pressure. It is desirable to maintain pressure standards between a minimum and maximum range. The pressure under which water is delivered to a customer depends upon many factors, including the consumption by other customers, pumping capabilities, pipe size, velocity of the water through the system, and the design of the water system.

  Water pressure can be controlled to a certain extent through the operation of pumps and other components of the system. However in some instances, system changes may be necessary to meet pressure standards.

  As part of the Long Term Water Utility Study, desirable ranges for pressure and velocity were identified and system improvements were recommended where conditions fell outside of these

ranges. Work is currently underway to design and construct a second pressure zone to address lower pressures in the north end of the city.

- **Efficiency of Operations** – Electricity used in pumping water is a significant cost. This cost is a factor of the efficiency of the pumps as well as the hydraulics of the system. Pumping operations are regularly reviewed to identify where system improvements or operational changes could reduce electrical costs. Changes are pursued when cost-effective.

Water Supply

Buffalo Pound Lake now provides 100% of Regina's water needs. The water is treated at the Buffalo Pound Water Treatment Plant, which is jointly owned by the cities of Regina and Moose Jaw. It was built in the 1950s in order to provide water for those two cities. The facilities are administered by the Buffalo Pound Water Administration Board, which consists of two members appointed by the City of Regina and one member appointed by the City of Moose Jaw.

Although the plant is operated as a separate entity, there is a high degree of communication and cooperation between the plant operators and the two cities.

On an annual basis, the Board establishes a general water rate. The rate is established on a cost-recovery basis. The 2011 rate will be $210.59 for one million litres, a 2.9% increase over the 2010 rate. The increase is due primarily to rising costs for electricity, increases in unit prices for treatment chemicals, equipment price increases, and increases for wages and benefits.

Since Buffalo Pound Lake is shallow and prone to the growth of algae and other organic materials, treatment of the lake water is challenging. Over the last ten years, the lake water has required higher levels of treatment to provide water that meets the City's water quality objectives.

The City's budgeted 2011 cost of water purchased from Buffalo Pound is approximately $6.0 million, or about 54% of the total costs of the Water Supply, Pumping and Distribution Program, or about 13.7% of total Utility costs excluding debt and transfer to the General Operating Fund.

Future planning for the plant must address new and anticipated regulations related to health effects. The review and update of the City's Long Term Water Utility Plan includes a study of the Buffalo Pound Water Treatment Plant. Results of the study include:

- Disinfection – The plant uses chlorine for treatment and disinfection. Chlorinating naturally occurring organic material results in the formation of disinfection by-products known as trihalomethanes and heloacetic acids, which are harmful to human heath. The Study recommends reducing the use of chlorine if possible in conjunction with the addition of ultraviolet light disinfection which is effective in reducing risks associated with cryptosporidium.

- Taste and Odour Control – The plant uses granular activated carbon and powdered activated carbon to control taste and odour generated by algae in Buffalo Pound Lake. The percentage of time that taste and odour control is required has been increasing for a number of years. The Study discusses the performance of a detailed analysis of additional contactors versus additional storage for granular activated carbon but recommended a third screw pump and four additional contactors.

- Wastewater Residuals Management – The treatment processes remove particulate matter along with approximately 6% of the total water volume from the lake water. This wastewater must then be treated and disposed to the environment. The existing wastewater lagoons are overloaded. Use of the Recycle Facilities installed in 1985 was terminated in the 1990s due to cryptosporidium concerns. Recycling could be restored soon after UV disinfection is implemented.

- Water Stability – Treated water is slightly corrosive which leads to the softening of concrete tanks in the water treatment plant and the slow deterioration of piping and fittings in the water distribution system which contains metal. Corrosion control in the form of protective coatings for concrete tanks and pH adjustment of treated water is recommended in the Study.

An engineering consultant has been engaged to initiate a review of upgrade concepts identified in the Long Term Planning Study, and to move forward on predesign and detailed design of confirmed upgrades over multiple year capital program.

A Waterworks System Assessment (WSA) was completed for the Buffalo Pound Water Treatment Plant and Regina's Water System in 2005. WSA's are required every five years in accordance with Saskatchewan Environment's 2002 Water Regulations. The WSA update will be completed by the end of 2010. The WSA evaluates current performance, level of optimization, functionality, capability, efficiency and sustainability of the waterworks and identifies required improvements.

As part of the total water purchase costs the two cities also contribute an amount equal to 10% of the general water charges to a Capital Replacement Reserve used to pay for replacement and upgrading of equipment in the plant.

Costs for major improvements to the plant are shared with the City of Moose Jaw. The cost-sharing ratio is determined by the percentage ownership of each City, which at the present time is approximately 73% for Regina and 27% for Moose Jaw.

Regina can also draw water from 9 wells located in and around the city. Wells currently are available for emergency water supply in the event of a failure in the Buffalo Pound Water Supply; however, the amount available from the wells is less than the city's typical daily needs.

The well water meets current regulatory standards but has levels of iron, manganese and hardness that exceed the City's water quality objectives. These minerals can cause staining on fixtures, as well as the appearance of "discoloured" water. The minerals also cause problems by forming deposits in the water system, requiring more frequent maintenance.

A number of tests are carried out to ensure that the water meets the water quality objectives. Tests include:

- Water quality at the Buffalo Pound Water Treatment Plant is extensively monitored. On-line analyzers are used to monitor the major parameters. The water is continually monitored after every treatment stage. Laboratory staff perform over 25,000 analyses per year monitoring 65 different water quality parameters. The cost of these procedures is included in the general water rate for water purchased from Buffalo Pound.

- Tests are also carried out at various points in the City's water supply and distribution system. Regular sampling and testing is done in order to comply with provincial requirements for the operation of the water system, as well as to ensure the City's water quality objectives are met.

Test results show that the water supply meets all regulatory guidelines.

In addition to carrying out testing of treated water, steps are taken to safeguard the water supply. Identification and prevention of possible sources of groundwater contamination is an ongoing process. Saskatchewan Watershed Authority in conjunction with stakeholders completed a Source Water Protection Plan for the Upper Qu'Appelle and Wascana Creek watersheds in 2008.

Water Pumping

Three pumping stations are used to pump water from reservoirs into the distribution system. The operation of all stations must be coordinated along with supplies from Buffalo Pound and other components of the supply system such as the reservoirs. Since electrical costs are a major component of this operation, it is important that the pumps are operated in an efficient manner. Water pumping must also be provided when electrical power failures occur.

In order to coordinate the operation of each station and to operate the pumps in an efficient and reliable manner, system data is required. This information is obtained from a computerized Supervisory Control and Data Acquisition (SCADA) system.

Water Distribution

The water distribution system consists of buried pipelines made of cast iron, AC, or PVC. Steel is used for large supply mains exceeding 500 mm in diameter. Cast iron pipe was installed from 1904 until the 1940s. AC was used throughout the 1950s, '60s and '70s. AC and PVC pipe comprise 55% and 30% respectively of the 1,070 kilometre of mains in the system as of 2008. Approximately 107 kilometres of cast iron pipe has been replaced with PVC pipe since 1980. Some cast iron pipe remains due to location and size considerations (intersections, 400 mm diameter and over) and will be replaced as the need and opportunity arises. PVC pipe repair costs are virtually nil. The replacement of cast iron pipe with PVC pipe has allowed for significant savings in maintenance repairs.

Watermain breaks are a primary cause of water service disruptions, water losses and discoloured water. The frequency of breaks is a function of the pipe materials. The distribution of each material in the system and its failure rate is as follows:

Type of Pipe	Length (km)	Percentage of Total System Length (%)	Failure Rate (breaks/km)
Cast Iron	20	1.9	0.3
Asbestos Cement	550	51.4	0.3
PVC	310	29.0	-
Steel	165	15.4	-
Other	25	2.3	-
Total	1,070	100.0	

Note:
Lengths based on 2008 Benchmarking data. The failure rate is calculated based on break data from 2000 to 2009.

Water Quality Monitoring

Water quality monitoring activities include:

- Administering the Permit to Operate Water Works for operation of the water system, including water quality monitoring of all water sources and the distribution system, and maintaining records related to the safety and operation of the water system.
- Carrying out supplemental testing to gather water quality data from the water distribution system.
- Communicating information about water quality to the public.
- Efforts to protect the City's water source at Buffalo Pound Lake and the Regina area aquifers.

Water Loss Reduction

All water utilities experience a certain amount of water loss. Water loss is the sum of water leaks plus water usage that is not metered and thus not billed to a customer. Water used to suppress fires and some irrigation are examples of water use that is not metered. Water lost through watermain breaks is an example of leakage and is part of the "unavoidable real losses" from the water distribution system.

In 2006, the City of Regina changed the method for reporting water loss. The International Water Association (IWA) Water Loss Task Force has produced an international best practice standard approach for water balance calculations and the estimation of water loss. This best practice has also been adopted by the American Water Works Association (AWWA) and by the Federation of Canadian Municipalities (FCM) InfraGuide Best Practice "Water Use and Loss in Water Distribution Systems".

The international best practice performance measure advocated by the IWA and AWWA is the Infrastructure Leakage Index (ILI). The ILI is defined as the ratio of Current Annual Real Losses (Real Losses defined as physical water losses from the pressurized system up to the point of customer consumption) to the Unavoidable Annual Real Losses (UARL defined as a theoretical reference value representing the technical low limit of leakage that could be achieved if all of today's best technology could be successfully applied). The ILI is a highly effective performance measure because it is:

- Based on a calculation that has been tested globally;
- Unit-less and based on real water loss;
- System specific taking into account operating pressure, service connection length, pipe condition and water meter location; and
- Comparable to an international data set.

To date, 27 municipalities in Canada that are participating in water system benchmarking have or are undertaking this method of determining an (ILI) index for their water distribution systems. The ILI is a highly effective performance indicator for comparing (benchmarking) the performance of utilities in operational management of real losses.

The 2008 calculated ILI of 2.96 for the City of Regina in within the "Good" Technical Performance Range of 2.0 to 4.0, but there is potential for marked improvements. For comparison purposes an ILI index of 1.0 to 2.0 is within the "Excellent" Technical Performance Range and indicates that further water loss reduction, although possible, may be uneconomical. 2009 data is not yet available.

A Leakage Management Project was initiated in 2005 in Regina in cooperation with the National Research Council. The final report on the project is expected for release in the spring of 2011.

Water Volumes (million cubic metres)	2006	2007	2008	2009	2010
Total Water Supplied	28.1	28.5	28.0	27.6	26.0
Billed Consumption	23.5	23.7	23.2	22.6	21.1
Unaccounted Water	4.6	4.8	4.8	5.0	4.9
Unaccounted Water as a Per Cent of Total Water Supplied (%)	16.37	16.84	17.14	18.12	18.85
Infrastructure Leakage Index	2.35	3.04	2.96	n/a	n/a

Water Consumption and Conservation

The 2011 budget is based on an estimate of billable water consumption of almost 23.2 million cubic metres. About 56% of the consumption (13.5 million cubic metres) is for residential properties, 11% (2.5 million cubic metres) for multi-residential properties, and 33% (6.9 million cubic metres) is for non-residential properties.

The City has had a Water Conservation Program since 1985 and initiated an enhanced program in 1991. The primary goals of the program are to reduce the average per capita water consumption and the peak day water use. The following table provides information on the total water supplied and water use.

Water Supply and Use	2006	2007	2008	2009 [1]	2010
Total Water Supplied (mega litres)	28,158	28,534	27,956	27,556	25,957
Average Water Use per capita per day (litres)	400	393	381	379	357
Winter Water Use per capita per day (litres)	371	348	345	337	n/a
Summer Water Use per capita per day (litres)	487	458	434	453	n/a
Peak Day Water Use (mega litres)	127	137	122	134	109

Note:
1. 2009 per capital use is based on a population of 199,000.

The Water Conservation Program continues to meet the goals that were initially set. The following table provides the history of metered water consumption.

Metered Water Consumption
(Million Cubic Metres)

Year	Metered Water Consumption
1995	23.4
1996	24.9
1997	25.5
1998	24.4
1999	23.9
2000	23.3
2001	24.3
2002	24.0
2003	25.0
2004	22.4
2005	21.8
2006	23.1
2007	23.7
2008	22.7
2009	22.6
2010	21.1

The Water Conservation Program consists of identifying information that should be provided to the public on methods of conserving water, and communicating the information by means such as:

- Web page information.
- Xeriscape landscaping information available on the website.
- Matching grant program for schools.

Cross Connection Control and Backflow Prevention Program

Water quality can be compromised by the introduction of contaminants into the distribution system. This can occur wherever there is a cross connection, which is a link between the drinking water supply and a source of contamination such as a pesticide container on a garden hose or a boiler filled with anti-corrosion chemicals. Various conditions can cause backflow and/or backpressure in the water supply system. This can cause the drinking water to move in the opposite direction and take with it any materials it is in contact with or mixed with. The result is the water supply to a building or neighbourhood becomes polluted or contaminated.

The Cross Connection Control and Backflow Prevention Program was established in 1996 to reduce the possibility of contamination from such causes. Since the program was established, all new facilities have been reviewed for backflow prevention requirements through the building permit process. All existing commercial, institutional and industrial facilities are being inspected by the City. Any backflow requirements are identified and a one-year time frame given to become compliant.

The four primary components of the program are:

- Public education and awareness.
- Inspections of commercial, industrial and institutional facilities.
- Administration of the annual testing of testable backflow prevention assemblies.
- Review of appropriate building permits for new facilities.

Wastewater

Wastewater System Overview

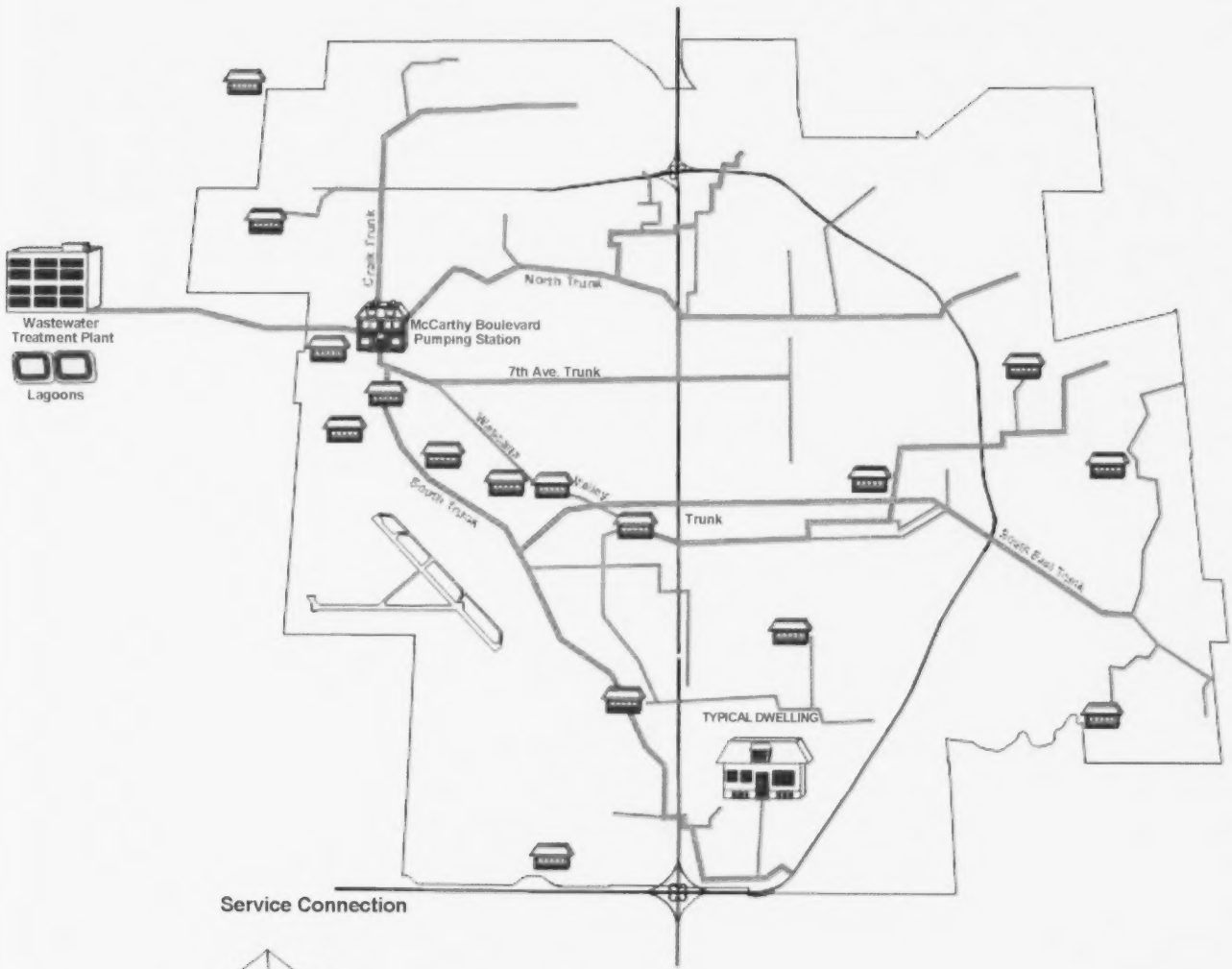
The wastewater collection and treatment system collects sewage from residential, institutional, commercial and industrial customers in the city. Wastewater treatment and final effluent meet provincial environmental standards. Service goals include:

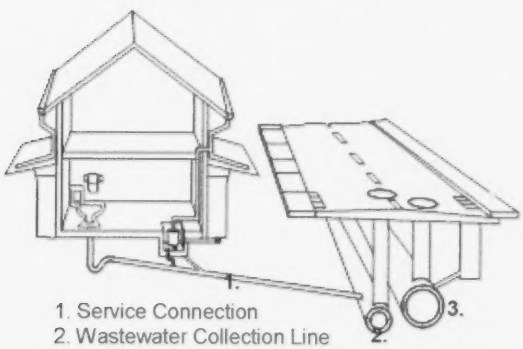
- Collecting domestic, commercial and industrial wastewater in the City and reliably delivering it to wastewater treatment facilities.
- Producing a treated wastewater effluent that is biologically and physically safe for the environment and which meets the requirements of the provincially issued operating permit.
- Ensuring solids removed from the wastewater are treated and disposed of in an environmentally responsible manner.

Components of the wastewater system shown in the map on the next page include:

- **Service Connections** – Building plumbing systems are attached to the wastewater collection system by a service connection pipe. The City owns and is responsible for the maintenance of the service connection pipe on the "City side" of the property line.
- **Collection Mains and Trunk Mains** – The service connection pipes are attached to wastewater collection mains which are typically 200-250 mm in diameter. The collection mains drain into trunk mains which are 300 mm or more in diameter. The system includes approximately 860 kilometres of pipeline.
- **Manholes** – Over 15,000 manholes provide access to the wastewater collection system for maintenance and repair.
- **Lift Stations** – Wastewater flows through the collection system by gravity. In low-lying areas in the city, lift stations must be used to pump the wastewater to collection and trunk mains at a higher elevation. Wastewater then continues to flow by gravity from that point eventually reaching the McCarthy Boulevard Pumping Station. There are 17 lift stations in the wastewater collection system.
- **McCarthy Boulevard Pumping Station** – All wastewater collected in the City flows to the McCarthy Boulevard Pumping Station. The station provides screening and continuous transfer of wastewater from the collection system to the wastewater treatment facilities five kilometres west. The McCarthy facility is capable of transferring wastewater at up to five times the average daily rate. The station is also the existing location where commercial septic tank haulers offload into the wastewater system.
- **Wastewater Treatment Plant** – The plant processes wastewater through four stages of treatment:
  - Primary treatment removes sand, grit and organic material from the sewage.
  - Secondary treatment reduces dissolved organic material through the use of aerated lagoons.
  - Tertiary treatment removes phosphorus, algae and suspended solids by using aluminum sulphate and polymer.
  - Ultraviolet light is used to disinfect the effluent before it is released into Wascana Creek.

WASTEWATER SYSTEM





1. Service Connection
2. Wastewater Collection Line
3. Drainage Line (Storm Sewer)

Wastewater
Sewer Main

Lift Station

Wastewater System Objectives

The provision of wastewater collection and treatment services is critical to the health and environment of the citizens of Regina and surrounding area. Objectives for wastewater collection and treatment are:

- **Quality of Sewage Effluent** – Treated wastewater from the City's wastewater treatment plant is discharged into Wascana Creek, which flows into the Qu'Appelle River upstream from the town of Lumsden. Federal and Provincial agencies establish criteria for sewage effluent that each wastewater facility in the province must follow. The major criteria are total phosphorus, fecal coliform bacteria, pH, biological oxygen demand and suspended solids in the treated effluent discharged to Wascana Creek.

- **Reliability of the Collection System** – Improperly functioning wastewater collection systems cause inconvenience, health and safety concerns. Problems such as blockages and leaks can result from grease and solids build-ups, deterioration of pipes, sags and breaks in wastewater collection lines and at connections caused by shifting soil, tree roots and foreign materials in the lines. To prevent these problems a regular inspection and maintenance program is required.

- **Separation of the Drainage System from the Wastewater Collection System** – The wastewater collection and treatment system is adequate to handle the day-to-day wastewater flows from the city. During rainfall and snow melt events, drainage water enters the wastewater collection system through basement sump pits connected to weeping tile drainage, catch basins inadvertently connected to the wastewater collection system, and infiltration through pipe cracks and openings such as wastewater manhole covers. Reducing the amount of drainage water entering the wastewater collection system can postpone large expenditures required for trunk mains and treatment plant capacity expansions. Work is being done to reduce infiltration to both new and existing wastewater mains and trunks.

- **Odour Control** – One of the by-products of wastewater collection and treatment is odour. Such odours are unpleasant for nearby residents and staff. Reduction of odours is accomplished by the use of containment, chemicals and aeration lagoons. The aeration equipment at the treatment facilities injects oxygen into the wastewater, preventing a septic environment that produces strong odours.

- **Efficiency of Operations** – Electricity is primarily required to operate pumps and aeration blowers. Chemicals such as aluminum sulfate and polymer used to remove phosphorus are a significant cost of operating the wastewater treatment plant. To minimize costs, it is important to make effective use of chemicals required to meet effluent targets. The most efficient use of electricity, chemicals and other inputs is accomplished by automatic process control and laboratory based performance information at all stages of the treatment process.

- **Maintaining Treatment Capacity** – Regina uses five aeration lagoons in its secondary treatment process. Over the years, as solids settle to the bottom of the lagoons and aeration systems deteriorate, capacity is diminished. To maintain treatment capacity, new lagoons must be built or old lagoons must be refurbished.

Drainage

Drainage System Overview

The drainage system collects water from rainfall and melting snow in and around the City and conveys it to Wascana and Pilot Butte Creeks. The system serves over 60,000 residential and commercial properties. Service goals include:

- Collecting and controlling drainage water within the city to minimize inconvenience, property damage and danger to the public.

- Monitoring the potential for flood conditions in Wascana Creek and the drainage channels and carrying out flood control measures as required.

The **Minor Drainage System** consists of the underground piping system that collects and transports small to medium amounts of drainage from rainfall, snow melt and minor storms. Components of the minor system include:

- Catch Basins – Over 25,000 catch basins located in streets and open space areas collect water and direct it into the drainage lines. Catch basins are designed to keep sand, silt and other matter out of the piping system by causing it to settle to the bottom of the catch basin.

- Lines, Mains and Trunks – There are approximately 700 kilometres of drainage lines located beneath streets. Lines and mains range from 200 mm to 1200 mm in diameter, with trunks over 1200 mm.

- Manholes – Over 15,000 manholes provide access to the system for maintenance and repair.

- Lift Stations – Drainage water flows through the system by gravity. There are low-lying areas where lift stations are used to pump the drainage water to a higher elevation. The water flows into a lift station at a low elevation, and is pumped to a higher level where it continues to flow through a pipe or channel. There are 13 lift stations in the drainage system.

The **Major Drainage System** is used when drainage water exceeds the capacity of the minor system and must flow over land. The major system is designed so that water will flow down roadways and land easements. Components of the major system include:

- Graded Roadways, Land Easements, Swales, and Lots – In order for the runoff water to flow over land to a point where it can be collected, the surface area must be properly sloped.

- Dry Bottom Detention Facilities – These are lower land areas constructed in open space areas such as parks. The detention facility contains outlets to and from the minor system. During periods of heavy rainfall, water that would otherwise overload the minor system enters the detention facility and is stored temporarily. The water from the detention facility then flows back into the minor drainage system at a later time when flows have gone down.

- Lake (or Wet) Retention Facilities – Lakes such as the ones in Lakeridge and Windsor Park are similar to dry bottom detention facilities, except they normally contain water all year for aesthetic reasons. When the minor system is overloaded, the water in these ponds rises, and then drops when the excess water flows back into the minor drainage system.

- Underground Detention Tanks – Underground detention tanks are also used, particularly in some of the downtown areas, to store excess water temporarily until it can be accommodated by the minor drainage system.

- Drainage Channels and Creeks – Drainage water empties into the drainage channels or Wascana Creek. The drainage channels function as very large drainage lines, with earthen banks used to control the water rather than enclosed pipelines. The drainage channels carry the runoff to Wascana Creek. Drainage from the Rowatt Flood Control Project south of Regina flows to Wascana Creek through constructed channel within the City Limits.

Although the major and minor systems are described as separate systems, they are part of an overall drainage system and must work in conjunction with each other. The systems are depicted in the map on the next page.

Drainage System Standards

Standards for drainage system design are normally expressed in terms of the size and type of storm a system can theoretically handle. For example, a drainage system may be designed to handle a 1:5 year storm, which means that it can handle the size of storm that statistically only occurs once in five years in the area. A drainage system designed to handle a 1:100 year storm would be able to handle the size of storm that statistically occurs once in 100 years in the area.

Statistical information is obtained from the Atmospheric Environment Service of Environment Canada to determine storm sizes. In the past, rainfall data was only available from the airport, but three additional data collection points have been added around the City since rainfall can vary significantly by area. Computer modelling is then done to determine the size of other storms.

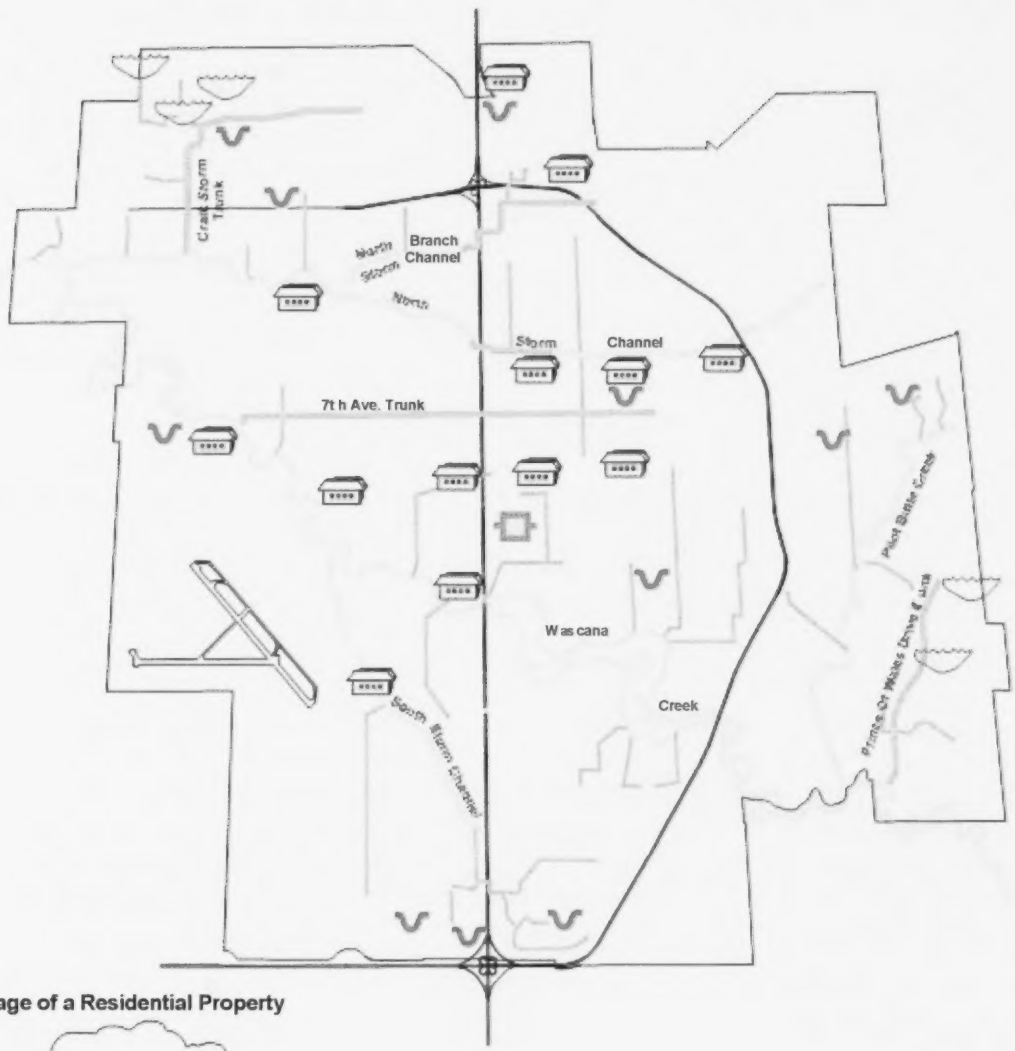
The following are some of the major rainstorms that have occurred in Regina over the past 30 years:

June 1975	1:25 year storm
July 1983	1:100 year storm (108 mm of rain in four hours)
June 1994	1:25 year storm
August 1995	1:25 year storm (severe hail)
July 2001	1:100 year storm (50 mm in one hour)
August 2004	1:100 year storm (76 mm in one hour)
September 2010	1:10 year storm

Factors examined in determining the effective "size of storm" include:

- Total rainfall volume.
- Intensity of rainfall – a storm that drops 100 mm of rain in one hour is much more difficult to handle than one that drops 100 mm over six hours.
- Previous rainfall – if the ground is saturated before the storm, no additional water can soak in. Flows in the drainage system are therefore greater.

DRAINAGE SYSTEM



Drainage of a Residential Property

1. Drainage Line (Storm Sewer)
2. Catch Basin
3. Wastewater Collection Line

Lift Station

Retention Pond

Dry Bottom Detention

Underground Detention

Storm Sewer Trunk Main

Storm Channel

Standards for drainage systems have been raised over time, and have been applied to new developments. However, it is very costly to retroactively apply higher standards to existing development. Details of the standards include:

- **New Development Standards** – The "minor" drainage system consists of catch basins and underground lines that quickly collect and transport water. The "major" drainage system, consists primarily of aboveground facilities such as roadways, easements, swales, and detention and retention facilities that can handle larger volumes of water.

  For new developments in the city, minor systems must be designed to handle a 1:5 year rainfall event. This corresponds with the general standard used across North America. While a higher standard would provide a higher level of service, the cost to construct underground facilities to handle larger storms is prohibitive. The major systems must be designed to handle a 1:100 year event. Until recently, the City had a minimum standard of 1:25 year event, but encouraged developers to target the 1:100 year event. This standard is now used in most larger prairie cities. The difference in costs between the two targets is not significant. As well, past experience has shown it is much more cost effective to design a new development to a high standard initially. Raising the standards in an area after it has been developed is very costly.

- **Existing Development Standards** – The City has adopted a target of 1:5 year events for existing minor systems, and 1:25 year events for existing major systems. Some areas of the city do not meet these targets. In the early 1980s, a program to study the drainage problems was initiated to identify solutions and carry out remedial measures to mitigate drainage issues. A Drainage Master Plan designating 17 areas was adopted. Conditions in each area are assessed, problems identified and potential solutions proposed. Over time, work required to address the problems is carried out through the capital program.

Most of the property damage caused in Regina during intense rainstorms has been the result of basement flooding. The flooding was caused by runoff water entering the wastewater collection system, resulting in sewer overload and back up into basements. Although the drainage system is separate from the wastewater collection system, there are a number of ways stormwater can enter the wastewater collection system. These include:

- Some older buildings still have roof downspouts connected to the wastewater collection system.

- Runoff water on lots with poor grading adjacent to the building enters weeping tiles and collects in basement sump pits, which then drain into the wastewater collection system.

The City has established an objective to reduce direct connections between drainage and the wastewater collection system. An objective has also been established to reduce the runoff water entering the wastewater collection system from basement sump pits by educating homeowners about steps they can take to prevent such problems.

The most well designed system cannot function effectively unless it is properly maintained. To ensure the system functions as designed, the following objectives have been established:

- Drainage lines over 450 mm are regularly inspected and cleaned as required.

- Catch basins in areas where leaves are a problem are typically cleaned every two years and outlying areas are cleaned on a seven-year cycle.

Dykes along Wascana Creek have been constructed and flood plains are maintained to contain creek flooding. The City's objective is to prevent major damage to property and maintain public safety in the event of flood conditions. Toward that end, monitoring is carried out during spring runoff to determine the risk of flood conditions and appropriate action is taken as necessary. The City has established an objective and

capital plans to upgrade dykes to meet a 1:500 flood event level, the provincial standard. The upgrading of the dykes in Riverside was completed in 2005 and those in the Dieppe area were completed in 2007.

In addition to these initiatives, in 2009, the City amended Sewer Services Bylaw No. 5601 so that weeping tile flows are prohibited from entering the wastewater system in newer neighbourhoods under development. This will reduce the likelihood of wastewater backup in newer areas in heavy rainfall events.

Forecasting and Controlling Floods

Flood conditions on Wascana Creek are relatively rare. In 1996, high snowfall caused flood conditions along the creek. Creek flows were projected to be 85 cubic metres per second, or a 1:30 year flood. Although the actual peak levels were not as high as the initial predictions, it was necessary to take preventative action. Costs were incurred for labour and equipment for sandbagging and pumping water out of flooded areas, as well as repairs for some City owned structures damaged along the creek, such as the Pinkie Road Bridge. In 1999, flood control costs were incurred as a result of a large snow accumulation late in the winter, followed by a very quick spring thaw. The estimated creek flow was 40 cubic metres per second, or a 1:10 year event.

Forecasting flood conditions involves communicating with provincial agencies regarding snow volumes and predictions for spring thawing. Early in the year, Saskatchewan Watershed Authority conducts assessments of the snow cover in the Wascana Basin, as well as other areas around Saskatchewan. As the spring thaw begins, water flows are measured throughout the creek system.

Budgets are prepared assuming spring runoff levels of an average year, where no special flood control measures are required like sand bagging and pumping behind the dykes when drainage line outlets are closed. The budget covers the cost of monitoring conditions on Wascana Creek and the drainage channels, as well as putting up barricades in areas where thin ice and water levels could pose a danger to the public.

Home Flood Protection Education Program

This program informs homeowners about the causes of basement flooding and the measures they should undertake on their property to prevent flooding damage from intense summer rainstorms. Information on home flood protection is available through the City's web page. Mitigation measures are required on both City and private property to accomplish neighbourhood service level improvements for managing large summer storm events and minimizing property damage and risk.

Engineering, Operations and Administration

The majority of the information regarding water, wastewater and drainage services is provided in the preceding sections of this report. The operating budget summary includes costs related to Engineering and Operations Administration.

Objectives for the planning, design, operations and maintenance engineering include:

- **Long Range Planning** – In order to meet customer demands, water, wastewater and drainage systems require high levels of capital investment. It is necessary to anticipate and plan for future requirements so that the necessary future investment can be provided. To accommodate this, the following objectives have been established:

  - Long range plans (20 to 25 years) should be carried out regularly for each of the three major Utility systems.

  - Ongoing conditions should be monitored and the long range plans updated as new information becomes available.

- **Effective Management of Capital Program** – City Administration provide planning and design engineering services for the Utility. All capital projects should be completed within their approved standards, timelines and budgets.

- **Establishment of Construction Standards** – Standards are developed for all infrastructure construction, including those relating to the Utility systems. These standards are applied to construction carried out by City crews, contractors and developers. Over time, standards evolve as new construction techniques and materials become available. The objective of these standards is to meet legislation requirements, optimize performance, and minimize the life-cycle cost for the provision of the services.

- **Customer Awareness** – There are a number of areas within the Utility operations where customer actions can collectively affect service and costs. Information is provided to customers to increase awareness. Current programs include:

  - Water Conservation
  - Cross Connection Control and Backflow Prevention
  - Home Flood Proofing
  - Creekwatch
  - Wastewater Discharge Practices

Engineering and Project Management

The Water and Sewer Services Department, the Environmental Services Department, and Development Engineering Department are responsible for planning, designing and supervising construction of the Utility systems infrastructure. A primary responsibility is overseeing the annual capital program. Projects carried out range from annual infrastructure renewal projects to less frequent major projects such as water treatment or wastewater treatment plant expansions. Engineering and design work may be done in-house or by external engineering firms. Construction work may be done by Public Works Division crews or by external contractors. The resources used for projects depend upon the nature of the project, the availability of resources, and the expertise required.

Environmental Monitoring

Environmental monitoring activities include:

- Ground water monitoring at the wastewater treatment plant.
- Surface water quality monitoring in the City's four retention lakes.
- Stormwater quality monitoring of urban drainage discharge to Wascana Creek and Wascana Lake.
- Snow dumpsite runoff monitoring.

Review of Development Proposals

Much of the City's water, wastewater and drainage systems are constructed by City staff, or by contractors under the direction of City. In the case of new development and re-development of existing areas, developers are responsible for constructing infrastructure including water, wastewater and drainage systems. This construction forms part of the Utility systems, and the City assumes responsibility for operation and maintenance of the systems.

Development proposals are reviewed by the Planning and Development Division to ensure design and construction meets City standards. Installations that do not meet City standards are identified and corrected by the developer.

Technical and Engineering Support

Public Works Division technical and engineering staff provide support to the field personnel responsible for maintaining the water, wastewater and drainage systems, and for carrying out capital construction work for projects constructed by City personnel.

In addition, staff from both Public Works Division and Planning and Development Division provides construction scheduling, construction coordination and administrative and technical construction management services, which includes:

- Establishing, monitoring, and updating construction schedules.
- Coordinating construction with Utility companies.
- Tracking and monitoring expenditures of various capital projects.
- Estimating the costs of water and sewer construction projects.
- Reviewing and analyzing unit cost information.
- Provide quality and quantity control of construction work.

Customer Billing and Collection

Customer Service

Service Regina provides front line customer service for the Utility as well as other City services. This priority is applied to all aspects of operations, especially in contact with external customers, but also in dealings with internal customers and in responses to questions and requests for information. Objectives for customer service include:

- Customer applications for water services and disconnections are handled accurately.
- Customers can access information about their bill and receive prompt responses to their inquiries.
- Payments can be made using convenient payment methods.
- All service requests are processed within a reasonable time frame, given the nature of the service required.

Customer call centre volumes are monitored to ensure key performance indicators (KPI) are being met. The two primary KPIs are that calls are answered within 25 seconds, 80% of the time, and that abandoned calls are kept below 5%.

Customer service is accessible by telephone, mail, fax, in-person and electronically via the City's website. Internet requests and e-business inquiries continue to increase and this continues to be an area of focus. Continued awareness of customer needs to access information and services quickly and efficiently in the manner of their choosing is the focus of customer service efforts.

Service Regina's one-stop shop approach provides customers with information about the City's services through one central contact number. By directing customer calls to the area concerned, staff ensure that the customer is dealt with effectively and efficiently at their first point of contact.

Service Regina strives to ensure customer satisfaction on every occasion in the five essential elements of service: timeliness, knowledge and competency, courtesy, fair treatment and final outcome. When all five of these elements are in place, customers rate the services provided highly. The goal of the customer service area is to ensure satisfaction in every one of these areas with every customer.

Administration, Billing and Collection

Objectives for billing and collection include:

- Customers are billed every month.
- Customers receive accurate, timely, and informative bills.
- New payment methods are introduced where they can provide convenience to the customer, and where they are cost effective.
- Collection action is taken as required.
- Percentages of overdue accounts and uncollectible accounts are at a reasonable level.

The administration of customer accounts and the billing and collection function includes:

- Managing customer accounts, including setting up new customers, discontinuing accounts and transferring accounts from one individual to another. There is also a requirement to manage contracts with out-of-town water users who receive water from the City.

- Managing activities related to water meters includes obtaining meter readings and handling turn ons or turn offs of water service. Customers are divided into automated meter-reading routes so the meters are read according to a monthly schedule.

  Water services must be connected and disconnected in response to customer requests and as a result of collection efforts.

- Generating customer bills – Customers are divided into billing cycles so each customer is billed every month.

- Collecting overdue customer accounts using a various collection tools. Interest is added to outstanding balances, which encourages timely payment. When accounts remain outstanding, payment arrangements are negotiated where possible. This includes maintaining a post-dated cheque database, as well as providing equalized payment options for Utility accounts.

Debt Management

This program includes the cost of principal and interest for debt issued to finance Utility capital projects, along with the cost of the debt issue. Debt charges are made up of two elements:

- Interest – This is the cost of interest payments on all outstanding debentures.
- Principal repayments – These payments represent the cost to redeem the principal portion of a debenture as it matures. A serial debenture does not remain outstanding in full for the life of the debt issued. As with a mortgage, a portion of the principal amount of the debt matures and is paid each year until the debt is fully mature. Alternatively, a bullet debenture generally requires interest payments on a regular basis; however, the principal is only repaid at the end of the term.

The following table shows the existing annual debt charges and debt maturities.

Schedule of Debt Charges and Debt Maturities ($000's)

		Debt Maturities		
Year	Annual Debt Charges ($)	Debt Maturing ($)	Per Cent of Total (%)	Cumulative Percentage Reduction (%)
2011	8,154.0	5,506	9.5	9.5
2012	6,423.3	5,506	9.5	19.0
2013	2,147.2	1,506	2.6	21.6
2014	45,187.4	44,606	76.9	98.4
2015	1,439.0	906	1.6	100.0
	Total	58,030	100.0	

In 2010, debt in the amount of $42.4 million was reassigned from the GTH to fund the General Utility Reserve. As a result of the reassignment of this debt, no additional debt was required in 2010 to fund the Utility's capital program. Additional debt will be required for the remainder of the 2011 – 2015 Utility Capital Program in the amount of $15 million in 2012, $39 million in 2013, $38.9 million in 2014 and $36 million in 2015. In 2014, the GTH debt will mature and new debt of $43.1 million will be required to replace it. This will result in a total debt requirement of $82 million in 2014. The Utility Model includes funding for debt issuance costs and the repayment of projected debt issues based on a twenty-year term and an interest rate of 5%.

For further details on debt projections for future years, see Utility Capital Funding Section.

Utility Capital Program

Capital Program Summary

	2011	2012	2013	2014	2015	Total
Capital Expenditures ($000's)						
Water Supply, Pumping & Distribution	23,871	25,098	18,255	13,200	11,130	91,554
Wastewater Collection & Treatment	31,925	25,089	55,415	54,250	51,435	218,114
Drainage	13,300	3,457	7,260	6,963	2,912	33,892
Total Expenditures	69,096	53,644	80,930	74,413	65,477	343,560
Capital Funding ($000's)						
General Utility Reserve	52,646	28,507	29,070	24,823	18,761	153,807
Service Agreement Fees - Utility	15,629	7,265	10,809	8,639	9,349	51,691
Debt	-	15,000	39,000	38,900 [1]	36,000	128,901
External Contributions	821	2,872	2,051	2,051	1,367	9,162
Total Funding	69,096	53,644	80,930	74,413	65,477	343,560

Note:

1. *The debt reassigned from the GTH is fully due in 2014. In that year, additional debt in the amount of $43.1 million will be required to replace the reassigned GTH debt.*

Infrastructure Overview

Regina has a substantial investment in utility infrastructure. A challenge for Regina, and other cities, is to generate sufficient funds to maintain these assets. The gap between the annual requirement to sustain the infrastructure and the annual investment is referred to as the "Infrastructure Gap". Regina is a relatively young city and has, to some extent, been shielded from the full impact of its utility infrastructure deficit since, until recently, much of the buried infrastructure was still within its expected service life.

In recent years, there has been increased discussion of the infrastructure deficit faced by cities, and the need for additional funding from the senior governments and/or alternate revenue sources for cities. In 2009, the Federal Government established the Federal Infrastructure Stimulus Fund, which provides funding towards the rehabilitation or construction of provincial, territorial, municipal and community infrastructure projects. In 2011, the City will pursue funding opportunities as and when they become available.

In addition, the City has applied for funding under the Federal Green Infrastructure Fund to be used for the Wastewater Treatment Plant Expansion project.

In 2004, City Council approved the Residential Growth Study (Report CR04-196). Implementation of the Residential Growth Study will require integration of infrastructure requirements into sector and concept plans. These plans will detail the physical and engineering aspects of the new infrastructure along with funding and phasing of the work. Current development policies are based on the provision of trunk services uniformly throughout the city, with Servicing Agreement Fees, levied pursuant to *The Planning and Development Act, 2007*, the same for all newly developed land, irrespective of location. The development scenarios adopted in the Residential Growth Study result in significant trunk infrastructure requirements and costs for each of the growth areas.

Section 22.4 of *The Cities Regulations* requires Council to adopt a capital investment strategy that includes the method used for determining capital plans respecting the waterworks. Capital requirements (capital investment strategy) are determined based on engineering and planning studies that take into account the infrastructure requirements of the Utility required to meet the service goals of the Utility, as determined by City Council or prescribed by legislation. Infrastructure requirements are being addressed through a series of studies. Studies recently completed or underway include:

- The Wastewater Collection System Assessment Study, completed in 2004, estimated the replacement value of wastewater collection system as $635 million. The study defined requirements for the long-term sustainability of the wastewater collection infrastructure. In 2006, further work was done to investigate inflow and infiltration to the wastewater collection system.

- The review of the Long Term Water Utility Plan was completed in 2006. It examines the present condition of Regina's water system, forecasts the requirements for the next 20 years and provides a plan for meeting future requirements. An estimate of the replacement value for the water distribution system is $250 to $300 million, with a further $350 to $400 million for the supply system, including the City's share of the Buffalo Pound Water Treatment Plant.

- In 2007, the City of Regina partnered with the City of Saskatoon, for the development of a Buried Asset Repair Strategy. Approximately two-thirds of the water distribution and wastewater collection systems were constructed in a thirty-year period between the early 1950s and the late 1970s. In this period, almost all of the water distribution system construction used asbestos cement (AC) pipe. AC pipe has a reliable service life, under the conditions that prevail in Regina, of 50 years. In recent years, there has been an increasing frequency in breaks in asbestos cement pipe. This pattern will likely continue as the system ages.

- The value and infrastructure requirements of the wastewater treatment plant were documented through the Sewage Treatment Plant Planning Study. The final report was completed in late 2005. The initial Wascana Creek Receiving Environment Study was also completed in 2005. Both studies were used in developing capital plans for the wastewater treatment plant upgrade and to develop future plans to create a receiving environment water quality model.

- In 2011, the City of Regina will complete the pre-design study for the Wastewater Treatment Plant Expansion Project. This project is required to meet new regulatory requirements as well as provide expanded hydraulic and process capability associated with future City growth.

These studies will contribute to determining the infrastructure gap.

Water Supply, Pumping and Distribution

Capital Summary ($000's)	2011	2012	2013	2014	2015
Capital Expenditures					
1. Water Supply					
- Supply Line Improvements	1,000	1,000	400	-	-
- Buffalo Pound Water Treatment Plant Upgrade	3,000	10,500	7,500	7,500	5,000
2. Water Pumping					
- Second Pressure Zone System Upgrades	13,040	-	-	-	-
- Water Pumping Station Upgrades	400	500	-	-	-
3 Water Distribution					
- Chuka Boulevard Trunk Water Main Extension (2012)	-	640	-	-	-
- Chuka Boulevard Trunk Water Main Extension (2015)	-	-	-	-	530
- Future Infrastructure Renewal - Water	-	2,000	1,000	1,000	1,000
- Second Pressure Zone Implementation	300	2,600	-	-	-
- Trunk Water Main - Junor Drive from Pasqua Street to Rochdale Boulevard		-	1,100	-	-
- Trunk Water Main - Rochdale Boulevard from Wal-Mart to 600 m East	70	300	-	-	-
- Water Distribution Main Oversizing	-	100	100	100	100
- Water Infrastructure Renewal	4,700	6,480	7,580	3,980	3,980
4 Other Capital Projects					
- AMR System Equipment Replacement Upgrade	20	20	40	20	20
- CCTV Pressure Washer & Vacuum Trailer	360	-	-	-	-
- Development of the Official Community Plan	140	75	35	-	-
- ITS Infrastructure - Utility Portion	300	300	300	300	300
- Pool Equipment - Half-tons	85	-	-	-	-
- Trench Settlement Remediation	200	200	200	200	200
- Truck for Capital Construction Program	31	-	-	-	-
- Trunked Radio System User Gear	-	283	-	-	-
- Utility Billing System Upgrade	150	100	-	100	-
- Water Distribution System Equipment	75	-	-	-	-
Total Expenditures	23,871	25,098	18,255	13,200	11,130
Capital Funding					
General Utility Reserve	13,282	11,011	14,969	11,049	9,133
Service Agreement Fees - Utility	9,768	3,715	1,235	100	630
Debt	-	7,500	-	-	-
External Contributions	821	2,872	2,051	2,051	1,367
Total Funding	23,871	25,098	18,255	13,200	11,130

Water Supply

Funding will cover consulting, contractors, property, materials and any other work, resources, staff, technologies or support related to each of the projects described below.

Buffalo Pound Water Treatment Plant Upgrades
Improvements are required at the Buffalo Pound Water Treatment Plant to continue meeting quantity and quality of treated water delivered to Regina and Moose Jaw. Work includes design studies, detailed design engineering, and several installation construction contracts over a multiple year upgrade schedule. Funding is provided by the City of Regina's Utility Reserve (73%) and the City of Moose Jaw (27%).

Supply Line Improvements
This program inspects, repairs, and replaces main valves, valve structures and other miscellaneous work on the Buffalo Pound supply pipeline and other major supply mains within the City. As the pipelines age, improvements are necessary to ensure the reliability of the water supply to the City and reduce the number of emergency repairs. The Utility Reserve funds this work.

Water Pumping

Funding will cover consulting, contractors, property, materials and any other work, resources, staff, technologies or support related to each of the projects described below.

Second Pressure Zone System Upgrades
An engineering analysis indicated upgrades to the water system would be necessary to improve pressure and fire flows to the north portion of the City. This project will ensure adequate service to existing and new developments. For 2011, funding for this project is provided by the Utility Reserve (29%) and Utility Servicing Agreement Fees (71%).

Water Pumping Stations Upgrades
This project provides for the replacement of equipment and components in water pumping stations which have reached the end of their service life or cannot be economically repaired. The Utility Reserve funds this work.

Water Distribution

Funding will cover consulting, contractors, property, materials and any other work, resources, staff, technologies or support related to each of the projects described below.

Chuka Boulevard Trunk Water Main Extension (2012)
This project provides for the construction of a trunk water main along Chuka Boulevard from 250 m north of Arcola Avenue to 680 m north of Arcola Avenue to support development of The Greens subdivision and later extending into The Towns subdivision further north. This project is funded from Utility Servicing Agreement Fees and does not require funding in 2011.

Chuka Boulevard Trunk Water Main Extension (2015)
This project provides for the detailed design and construction of approximately 430 meters of trunk water main to service the Greens on Gardiner subdivision and support potential development to the north of the Greens on Gardiner within the 235,000 population growth scenario. This project is funded from Utility Servicing Agreement Fees and does not require funding in 2011.

Future Infrastructure Renewal - Water
The water distribution system requires ongoing rehabilitation and upgrading to maintain and improve the level of service and ensure the system's reliability and safety. This program provides for additional inspection, assessment, replacement and rehabilitation of water distribution mains and appurtenances. The Utility Reserve funds this program.

Second Pressure Zone Implementation
This project provides for the detailed design of additional infrastructure to address low water pressure and fire fighting flow deficiencies in the northeast and northwest sectors. Completion of this project in 2012 will support further development in the northeast and northwest sectors. Funding is provided from Utility Servicing Agreement Fees and will begin in 2011.

Trunk Water Main - Junor Drive from Pasqua Street to Rochdale Boulevard
This provides for the installation of approximately 1400 m of 400 mm diameter trunk water main along Junor Drive. Funding is provided from Utility Servicing Agreement Fees and does not require funding in 2011.

Trunk Water Main - Rochdale Boulevard from Wal-Mart to 600 m East
This project provides for the installation of approximately 600 m of 400 mm diameter trunk water main along Rochdale Boulevard. This project is funded from Utility Servicing Agreement Fees and will begin in 2011.

Water Distribution Main Oversizing
This program provides for the construction of new water distribution mains requiring oversizing to allow for distribution of water to future developments beyond the concept plan area. Funding is provided from Utility Servicing Agreement Fees and does not require funding in 2011.

Water Infrastructure Renewal
The water distribution system requires ongoing rehabilitation and upgrading to maintain and improve the level of service and ensure the system's reliability and safety. The program typically includes inspection, assessment, replacement and rehabilitation of water distribution mains and appurtenances. The Utility Reserve funds this program.

Other Capital Projects

Funding will cover consulting, contractors, property, materials and any other work, resources, staff, technologies or support related to each of the projects described below.

AMR System Equipment Replacement Upgrade
In order to obtain readings from AMR meters, the City has deployed a number of hand-held and vehicle-mounted (VXU) radio-read devices. These devices are warranted and can be repaired and upgraded for a period of time, but in order to manage upgrades effectively a consistent program is more appropriate. This program is funded from the Utility Reserve.

CCTV Pressure Washer & Vacuum Trailer
A new sewer jet and camera is required to support the CCTV inspection program for underground domestic sewer and storm drainage systems. Funding is provided from the Utility Reserve.

Development of the Official Community Plan Utility Funded
This project will result in a new Official Community Plan (OCP) for Regina, replacing the Regina Development Plan. The OCP will describe what kind of city Regina intends to become and include a policy framework that will guide how it will get there in the context of the City's physical, environmental, economic, social, and cultural development. This project is funded from Utility Servicing Agreement Fees and will begin in 2011.

ITS Infrastructure - Utility Portion
This program provides for the Utility contribution to IT projects that support the Utility as approved in the General Capital Program. Funding is provided from the Utility Reserve.

Pool Equipment - Half-tons
This funding provides for the incorporation of half-tons to service part of the branch fleet rather than using a pool rental approach for supply of long-term required equipment. Funding is provided from the Utility Reserve.

Trench Settlement Remediation
Cracking and settling of sidewalks, curbs, gutter and pavement occur as a result of backfill settlement at watermain work locations, resulting in drainage problems. This program corrects settlement at these locations. The Utility Reserve funds this program.

Truck for Capital Construction Program
This funding provides for the incorporation of a half-ton for inspecting and testing related to the capital construction program. Funding is provided from the Utility Reserve.

Trunked Radio System User Gear Replacement - Utility Fund
Trunked Radio System Infrastructure Upgrade will require new user gear (portable and mobile radios) as existing gear will not work on the new Infrastructure. This program is funded from the Utility Reserve and does not require funding in 2011.

Utility Billing System Upgrade
The upgraded version of the Utility Billing system has significant new functionality, including e-billing, electronic work queue, customer contact tracking, and dispatch functionality. This project provides for the review of the improved functionality of the system and implementation of selected functionality. Funding is provided from the Utility Reserve.

Water Distribution System Equipment
This funding provides for the purchase of a single axle dump truck to haul material for backfill of excavations. Funding is from the Utility Reserve.

Wastewater Collection and Treatment

Capital Summary ($000's)	2011	2012	2013	2014	2015
Capital Expenditures					
1. Wastewater Collection:					
- Greens on Gardiner 600 mm Sanitary Trunk Main Extension	-	-	1,500	-	-
- Lift Station Upgrade	370	500	490	75	400
- Sanitary Trunk Main - Rochdale Boulevard from Wal-Mart to Kensington Greens	200	1,150	-	-	-
- Sewer Collection Mains Oversizing (2012 - 2015)	-	100	100	100	100
- Wastewater Infrastructure Renewal	6,805	8,445	8,755	6,355	6,365
- Westhill Collection System Improvements	500	-	-	-	-
2. Wastewater Treatment:					
- McCarthy Boulevard Pumping Station	14,000	-	-	-	-
- Waste-Hauler Station Development	2,400	-	-	-	-
- Wastewater Treatment Plant Expansion	2,800	10,000	44,300	44,200	44,300
- Wastewater Treatment Plant Improvements	600	3,310	-	3,250	-
- Wastewater Treatment Plant Refurbishing	4,250	1,584	270	270	270
Total Expenditures	31,925	25,089	55,415	54,250	51,435
Capital Funding					
General Utility Reserve	29,014	14,539	6,841	7,011	7,361
Service Agreement Fees - Utility	2,911	3,050	9,574	8,339	8,074
Debt	-	7,500	39,000	38,900	36,000
Total Funding	31,925	25,089	55,415	54,250	51,435

Wastewater Collection

Funding will cover consulting, contractors, property, materials and any other work, resources, staff, technologies or support related to each of the projects described below.

Greens on Gardiner 600 mm Sanitary Trunk Main Extension
This project provides for the construction of a 600 mm diameter extension to the Greens Trunk Main along Chuka Boulevard from Road D to the northern boundary of the Greens on Gardiner subdivision. This project is funded from Utility Servicing Agreement Fees and does not require funding in 2011.

Lift Station Upgrade
The City's wastewater pumping stations are aging and require upgrading to restore or improve the level of service and to reduce emergency repair costs. This program will include assessment, pre-design, rehabilitation, upgrades and/or replacement of existing pumping stations. The Utility Reserve funds this program.

Sanitary Trunk Main - Rochdale Boulevard from Wal-Mart to Kensington Greens
This project provides for the installation of approximately 1400 m of 600 mm sanitary trunk along Rochdale Boulevard. This project is funded from Utility Servicing Agreement Fees and will begin in 2011.

Sewer Collection Mains Oversizing (2012-2015)
This program provides for the construction of new sewer collection mains requiring oversizing within new subdivisions for future developments. Funding is provided from Utility Servicing Agreement Fees and does not require funding in 2011.

Wastewater Infrastructure Renewal
The wastewater collection system requires ongoing rehabilitation and upgrading to maintain and improve the level of service and to ensure the system's reliability. This program includes inspections, assessments, relining, replacement, and rehabilitation. The condition assessment and rehabilitation is done both in conjunction with scheduled roadway renewal projects and proactive locations identified in the system. The Utility Reserve funds this program.

Westhill Collection System Improvements
In 2011, this project will implement recommendations provided by the Westhill Collection System study budgeted and anticipated to be completed in 2010. The improvements will address both level of service improvements in the existing Westhill subdivision as well as provide for future growth in the surrounding undeveloped area. This project is funded from the Utility Reserve (82%) and Utility Servicing Agreement Fees (18%).

Wastewater Treatment

Funding will cover consulting, contractors, property, materials and any other work, resources, staff, technologies or support related to each of the projects described below.

McCarthy Boulevard Pumping Station Upgrade
McCarthy Boulevard Pumping Station requires upgrades involving building repairs, pumping, screens for removal of solids and debris, HVAC/electrical components, and additions of an odour abatement system to continue to provide reliable wastewater conveyance to the Wastewater Treatment Plant. Funding is from the Utility Reserve (85%) and Utility Servicing Agreement Fees (15%).

Waste-Hauler Station Development
This project involves the development of a new user pay wastewater truck hauler discharge station to serve city and local area needs. Funding is from the Utility Reserve.

Wastewater Treatment Plant Expansion
In order to meet new regulatory requirements of both the Provincial and Federal Governments, a major upgrade of the Wastewater Treatment Plant is required to treat the City's wastewater to higher standards. Work involves design engineering, equipment procurement, and installation construction contracts over a multiple year project schedule and also includes Phase 1 of the maintenance building. In 2011, funding will be provided from Utility Servicing Agreement Fees (18%) and the remaining 82% from the Utility Reserve.

Wastewater Treatment Plant Improvements
The Wastewater Treatment Plant requires improvements to the grit removal system, the maintenance management system, valve chamber and UV Disinfection System, and addition of a second stage to the maintenance shop. For 2011, funding is provided from the Utility Reserve.

Wastewater Treatment Plant Refurbishing
This project provides funding for major maintenance projects beyond regular O&M budget works to refurbish various areas of the Wastewater Treatment Plant, including administration, laboratory, lagoons, primary treatment plant, sludge dewatering, tertiary treatment plant, and the site. The Utility Reserve funds this program.

Drainage

Capital Summary ($000's)	2011	2012	2013	2014	2015
Capital Expenditures					
1. Drainage Systems:					
- Albert Park Detention (Area 2B)	4,000	-	500	3,500	-
- Area #8 Upgrades	-	200	-	-	-
- Area 1 & 17 Upgrades	200	-	-	-	-
- Catchbasin Cleaner	315	-	-	-	-
- Chuka Creek Channelization - Phase 2	2,200	-	-	-	-
- Detention Pond (F) - Pasqua Street at Rochdale Boulevard	-	-	-	-	300
- Detention Pond (J) - CNR Railway north of Hird Crescent	750	-	-	-	-
- Dorothy Street Crossing Upgrade	1,430	-	-	-	-
- Drainage Infrastructure Renewal	2,705	1,557	1,560	2,063	2,067
- Drainage Pumping Station Upgrading	1,500	1,000	-	-	-
- Dykes, Drainage Channels and Lake	200	200	200	200	200
- Harbour Landing Detention Pond - MR10	-	300	-	-	-
- Harbour Landing Detention Pond - MR7	-	200	-	-	-
- Harbour Landing Detention Pond - MR8	-	-	-	200	-
- Highland Park/Cityview (Area 13A)	-	-	-	1,000	-
- South East Quadrant Detention (Victoria Avenue Interchange)	-	-	5,000	-	-
- The Towns - Detention Pond and Drainage Route	-	-	-	-	345
Total Expenditures	13,300	3,457	7,260	6,963	2,912
Capital Funding					
General Utility Reserve	10,350	2,957	7,260	6,763	2,267
Service Agreement Fees - Utility	2,950	500	-	200	645
Total Funding	13,300	3,457	7,260	6,963	2,912

Drainage

Funding will cover consulting, contractors, property, materials and any other work, resources, staff, technologies or support related to each of the projects described below.

Albert Park Detention (Area 2B)
This program will provide improvement for the drainage level of service in the Albert Park area. The Utility Reserve funds this program.

Area #8 Upgrades
This program will upgrade the drainage system in Area #8 (Assiniboia East) to improve the desired drainage level of service in the area. Funding for this program is provided from the Utility Reserve and does not require funding in 2011.

Area 1 & 17 Upgrades
This program will upgrade the drainage system in Area 1 & 17 to improve the desired drainage level of service in the areas. The Utility Reserve funds this program.

Catchbasin Cleaner
This funding provides for the purchase of a compact catchbasin cleaner used for maintenance of the drainage system catchbasins. Funding is provided from the Utility Reserve.

Chuka Creek Channelization - Phase 2
This project provides for the construction of Chuka Creek from The Greens on Gardiner to Arcola Avenue and will complete the channelization of Chuka Creek. This project is funded from Utility Servicing Agreement Fees.

Detention Pond (F) - Pasqua Street at Rochdale Boulevard
This project will construct detention pond (F) (as per the Northwest Sector Study) located at Pasqua Street and Rochdale Boulevard. The portion of land north of Argyle Park that drains west will be managed by this pond. Funding for this project is provided from Utility Servicing Agreement Fees and does not require funding in 2011.

Detention Pond (J) - CNR Railway north of Hird Crescent
This project will construct detention pond (J) - CNR Railway north of Hird Crescent to support development of Skyview. Funding is from Utility Servicing Agreement Fees.

Dorothy Street Crossing Upgrade
The Dorothy Street Crossing of the North Storm Channel will be upgraded in order to ensure the reliability of the storm infrastructure and to protect the downstream end of the channel. The project may consist of upgrading the culverts, improving erosion control, and increasing the capacity. The Utility Reserve funds this project.

Drainage Infrastructure Renewal
The drainage system requires ongoing rehabilitation and upgrading to maintain and improve the level of service and to ensure the system's reliability. This program includes inspections, assessments, relining, replacement, and rehabilitation. The rehabilitation is typically done in conjunction with scheduled roadway renewal projects. The Utility Reserve funds this program.

Drainage Pumping Station Upgrading
This is phase 3 of the upgrades required to improve the Ring Road Lift Station. This project improved the level of service of the drainage management system at the CNR overpass. Access to the Lift Station is also improved to allow for proper maintenance. The Utility Reserve funds this program.

Dykes, Drainage Channels and Lake Improvements
This program rehabilitates and improves the level of service of facilities such as dykes, channels, streams, lakes and ponds. Periodic assessments, repairs, modifications and improvements are required to ensure the integrity and capacity of these systems. The Utility Reserve funds this program.

Harbour Landing Detention Pond - MR10
This project will construct detention pond MR10 in Harbour Landing. This project is funded from Utility Servicing Agreement Fees and does not require funding in 2011.

Harbour Landing Detention Pond - MR7
This project will construct detention pond MR7 in Harbour Landing. This project is funded from Utility Servicing Agreement Fees and does not require funding in 2011.

Harbour Landing Detention Pond - MR8
This project will construct detention pond MR8 in Harbour Landing. This project is funded from Utility Servicing Agreement Fees and does not require funding in 2011.

Highland Park/Cityview (Area 13A)
This program will upgrade the drainage system in Highland Park to improve the desired drainage level of service in the area. Funding is provided from the Utility Reserve and does not require funding in 2011.

South East Quadrant Detention (Victoria Avenue Interchange)
This is part 3 of 3 Glencairn Stormwater Management Improvement Projects. Upgrading the detention of the SE Quadrant in the Victoria Avenue and Highway #1 Interchange will improve the drainage level of service in the underpass. The Utility Reserve funds this project.

The Towns - Detention Pond and Drainage Route
This project provides for the design and construction of a detention pond and drainage channel or storm trunk main to Chuka Creek in the Towns subdivision. Funding is provided from Utility Servicing Agreement Fees and does not require funding in 2011.

Utility Capital Funding

Funding for the Water and Sewer Utility Capital Program is primarily from the following sources:

- General Utility Reserve.
- Utility Servicing Agreement Fees.
- Federal and Provincial Infrastructure Programs.
- Debt.

General Utility Reserve

The General Utility Reserve is funded through the operating surplus of the Utility. Each year the Utility generates a surplus, a portion of which is transferred to the general operating and capital budgets, with the balance transferred to the General Utility Reserve. The reserve is primarily used to fund capital projects, but is available should there be an operating shortfall. At present, a significant surplus in the General Utility Reserve is required to offset the shortfall in the Utility Servicing Agreement Fee Reserve. The following table provides a projection for the General Utility Reserve.

General Utility Reserve ($000's)

	2011	2012	2013	2014	2015
Reserve Balance - Start of Year	**62,459**	**38,501**	**39,600**	**43,997**	**47,640**
Net Operating Surplus	28,688	31,647	39,773	(5,563)	34,037
Replacement of Debt[1]	-	-	-	43,100	-
Capital Program Requirement[2]	(52,646)	(30,548)	(35,376)	(33,894)	(29,310)
Reserve Balance - End of Year	**38,501**	**39,600**	**43,997**	**47,640**	**52,367**

Note:

1. *The debt reassigned from the GTH is fully due in 2014. In that year, additional debt in the amount of $43.1 million will be required to replace the reassigned GTH debt.*
2. *The Capital Program Requirement reflects an estimated inflation rate applied to capital requirements. The 2011 – 2015 Utility Capital Program is presented in current dollars (without inflation). The Utility model incorporates projected increases in revenues and expenditures due to inflation. The net operating surplus reflects future projected increases and as such, the inflationary projection for capital program requirements is also used in this table.*

Servicing Agreement Fees

Servicing Agreement Fees (SAF) are pursuant to *The Planning and Development Act, 2007* and are collected when a servicing agreement is entered into between the City and a developer. The agreements require a payment to the City of a predetermined amount per hectare of land within the development area. The funds are intended to be used towards the construction of infrastructure to support new development.

In the case of roadways, water, and sewer costs for development, the City would normally incur the costs prior to the full development of an area. In other words, the costs are front ended through City funding

and paid back over time through collection of servicing fees. Parks and recreation infrastructure costs are generally incurred later in the process.

For 2011, the Utility Servicing Agreement Fees are set at $106,330 per hectare of land within the development area. The payment schedule requires 30% upon execution of a servicing agreement, another 40% within nine months and the balance within a further nine months. Eligibility of funding is by policy of City Council and includes:

- 100% of funding for the cost of trunk water mains larger than 250 mm in diameter with no service connections permitted.
- A portion of the cost to construct water mains larger than 250 mm in diameter.
- 100% of funding for wastewater collection trunks which are 300 mm or greater in diameter with no service connections permitted.
- A portion of the cost to construct wastewater collection mains larger than 300 mm in diameter.
- 100% of funding for wastewater pump or lift stations that are a component of a regional servicing plan.
- Population-based funding for expansion to the wastewater treatment plant for capacity for new development.
- 100% of the funding for water, wastewater or drainage studies providing for the servicing of new land development.
- 100% of funding for drainage trunks 1350 mm or greater in diameter with no service connections permitted.
- A portion of the cost to construct drainage mains larger than 1350 mm in diameter.
- 100% of funding for drainage lift stations that are an approved component of a regional drainage plan.
- 100% of funding for a dry bottom detention facility (or the equivalent for a dry facility if a wet retention pond is constructed) if the pond is an approved component of a regional drainage plan.
- 100% of funding for new or upgraded storm channels or drainage ways that are an approved component of a regional drainage plan.

Revenue from Servicing Agreement Fees is recognized when the funds are spent on an eligible project. Historically, capital projects eligible for Servicing Agreement Fees funding have been undertaken ahead of the funds being available resulting in a shortfall in Servicing Agreement Fees funding. This shortfall is funded through the surplus in the General Utility Reserve. The projections have been based on information provided by the development community, and estimates from Development Engineering for 2011 to 2015.

Servicing Agreement Fees ($000's)

	2011	2012	2013	2014	2015
Balance - Start of Year	**(36,723)**	**(45,682)**	**(46,747)**	**(51,753)**	**(54,740)**
Servicing Agreement Fees[1]	8,506	8,804	9,112	9,431	9,761
Interest applied to negative balance[2]	(1,836)	(2,284)	(2,337)	(2,588)	(2,737)
Capital Program Requirements[1]	(15,629)	(7,585)	(11,781)	(9,830)	(11,106)
Balance - End of Year	**(45,682)**	**(46,747)**	**(51,753)**	**(54,740)**	**(58,822)**

Note

1. *The projected Servicing Agreement Fees incorporate the approved rates for 2011, and increases in future years for inflation. The capital program requirements also incorporate projected increases due to inflation.*
2. *If the Servicing Agreement Fee Reserve is in a negative position, interest is calculated at the rate paid by the City for any debt required to fund the negative balance.*

A review of the SAF Policy in 2007 identified the desire to design and build some infrastructure projects in advance of adequate fees being collected by the City. For that reason, developers have entered into front ending servicing agreements with the City and have constructed work that would normally be funded through the SAF reserve funds. Through these agreements, the developers are entitled to an offset in the form of servicing agreement fee credits that would otherwise be payable. The servicing agreement fee credit concept allows the development community to proceed with new subdivisions without waiting for the City to construct the infrastructure to support the development.

The table below shows the projected servicing fee credits for 2011 to 2014 assuming all credits will be used within that four-year period. The projection of front-ended activities and their timing and subsequent redemption of credits, for which there is no historical pattern, contains a high degree of uncertainty.

Servicing Agreement Fee Credits

	2011[3]	2012	2013	2014
Balance (Start of Year):	**2,966**	**6,204**	**4,136**	**2,068**
Forecast of Credits Earned: [1]	5,306	-	-	-
Forecast of Credit Redemptions: [2]	2,068	2,068	2,068	2,068
Balance (End of Year):	**6,204**	**4,136**	**2,068**	-

Note:

1. *Forecasts all remaining available credits will be earned in 2011.*
2. *Estimates total net available credits amortized over four years.*
3. *Forecast projects the remaining credits developers will hold at the beginning of 2011 to be $2.97 million and are eligible to earn a maximum of $5.31 million before reaching the maximum authorized.*

Debt Financing

Section 135 of *The Cities Act* creates the authority to issue debt to finance capital projects. While debt is a source of capital financing, ultimately the cost of the debt (principal and interest) has to be funded through the utility operating budget. The following table is a summary of the outstanding debt and the debt maturing each year.

Schedule of Utility Debt Maturities ($000's)

	Debt Issues					
Year	$40 Million Nov 2002	$6 Million May 2004	$16 Million June 2009	$43.1 Million June 2009 (GTH)	Total	Per Cent of Total (%)
2011	4,000	600	906	-	5,506	9.5
2012	4,000	600	906	-	5,506	9.5
2013	-	600	906	-	1,506	2.6
2014	-	600	906	43,100	44,606 [1]	76.9
2015	-	-	906	-	906	1.6
Total	8,000	2,400	4,530	43,100	58,030	100.0

Note:

1. *The debt reassigned from the GTH is fully due in 2014. In that year, additional debt in the amount of $43.1 million will be required to replace the reassigned GTH debt.*

In the 2011 – 2015 Utility Capital Program, debt requirements are:

- $15.0 million in 2012.
- $39.0 million in 2013.
- $82.0 million in 2014 (includes $43.1 required to replace GTH debt)
- $36.0 million in 2015.

The Utility model includes funding for debt issuance costs and the repayment of projected debt issues based on a twenty year term and an interest rate of 5%. In 2014, the GTH debt will mature and new debt of $43.1 million will be required to replace it.

The future debt requirements are based upon proposed annual utility rate increase of 9% for 2011 through 2013. The future debt requirements are subject to change, as capital requirements in future years may change, the projected cost of requirements could change, or revenues generated from rate increases may change. In addition to the projected debt required to fund the 2011 – 2015 Utility Capital Program, based on current revenue and expenditure projections in the Utility model, there are additional debt requirements beyond 2015. The following graph shows projected utility debt levels incorporating the existing debt and the projected additional debt for 2011 through 2015.

Utility Debt Projections